MATERNAL ATTITUDES IN WOMEN TRAINED FOR CHILDBIRTH BY LAMAZE TECHNIQUES AND WOMEN RECEIVING NO FORMAL PRENATAL TRAINING

by

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The purpose of this study was to investigate the relationship between prenatal education using psychophysical methods and maternal attitudes. The major question was, do courses designed to alter attitudes of women toward childbirth also alter their attitudes toward the child and family?

This question was investigated by means of a pretest-posttest, nonequivalent control-group design. The experimental group consisted of 28 women enrolled in Lamaze Training for Childbirth classes in Greensboro, North Carolina. The control group consisted of 28 women selected from private practices of obstetricians. The groups were matched on variables of race, marital status, socio-economic level, age and parity. Pretests were administered approximately six weeks prepartum and posttests approximately six weeks postpartum. The experimental group attended Lamaze classes the six weeks before delivery of the child.

Measures of dependent variables were a parent attitude inventory (PAI) of the Likert type and a semantic differential (SD). The PAI contained 10 scales and two composite factors. An Acceptance-Rejection Factor was measured by five scales: Overprotective (Dominant), Overprotective (Submissive), Acceptance, Rejection and Objectivity; a Strictness Factor was measured by the scales Democracy,

Autocracy, Infant Training, Habits and Manners and Sex Training. The SD referred to 10 concepts rated on 10 bipolar adjective scales. Three of the concepts related to the birth process (Childbirth, Doctor and Hospital) and seven related to the family (Mother, Husband, Family, Baby, Son, Daughter and Childcare). For each of these concepts, two dimensions of meaning were assessed: Potency and Evaluative. The Potency Factor generally measured a negative attitude while the Evaluative Factor measured a positive one. The Potency Factor was assessed by the continua lenient-severe, light-heavy, soft-hard, weak-strong, while the Evaluative Factor was assessed by the continua bad-good, cruel-kind, unsuccessful-successful, painful-pleasurable, ugly-beautiful, negative-positive.

Statistical treatment consisted of analysis of variance on pretest data and analysis of covariance on posttest data with the pretest and educational level as covariates. The results of comparison of the groups on the pretests revealed four significant differences ($p < .05$): Evaluative dimension of Son, Potency dimension of Doctor and Childbirth and (strictness concerning) Sex Training. On all of these the control group scored higher. The results of the posttest analysis revealed four significant differences. On the SD all differences were confined to the Potency Factor. These were: Doctor, Daughter and Childbirth, with the control group higher on all measures. On the PAI, the

difference on Habits and Manners was significant at the .05 level with the experimental group higher.

It was concluded that there were initial differences in attitudes specific to childbearing and strictness concerning sex training between those women choosing Lamaze childbirth education and those women choosing no formal education, but that there was no difference between these groups in attitudes of acceptance or rejection of the child and concepts related to the family.

It was further concluded that those women exposed to Lamaze training for childbirth exhibited attitudes specific to childbearing and strictness concerning habits and manners which were different from women not exposed to Lamaze training, but that there was no difference in attitudes of acceptance or rejection of the child or concepts related to the family.

It was recommended that basic research be conducted into the meaning of childbearing to the individual and society. It was further recommended that the relationship of sexual attitudes and childbearing behavior be investigated, as well as the meaning of sex of the child to the parent, in terms of identification.

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CHAPTER I

INTRODUCTION

Attitudes of parents and especially of mothers have been identified as crucial antecedents in the development of the child. Maternal attitudes have been implicated in global characteristics of the child such as personality (Bayley and Schaefer, 1967) as well as more specific traits of intelligence (Hurley, 1965) or self-acceptance (Medinnus and Curtis, 1963).

It is widely assumed that human behaviors are reflective of attitudes held. A perplexing problem in child development research is variability in the attitudes and behaviors shown by mothers toward their children. An even more perplexing problem is that of identifying factors that may underlie this variability. The present study proposes to look beyond the effect of maternal attitudes on the child to the phenomenon of maternal attitudes themselves. Specifically, the question of this study is simply stated. What is the relationship between certain prenatal education and maternal attitudes?

The aspect of prenatal education of interest in this study is that involving psychophysical methods and in particular the Lamaze method of childbirth education.

Background for the Study

In searching for the antecedents of maternal attitudes the period of pregnancy becomes the focal point. Maternal attitudes have been related empirically to attitudes in pregnancy (Schaefer and Manheimer, 1960; Crowther, 1956; and Davids and Holden, 1970). Rubin (1967a, 1967b), in exploring the attainment of the maternal role, found that the period of pregnancy was a time when role preferences were selected and bound into the personality. Shainess (1963) in discussing the mothering encounter stated that the conditions of pregnancy, delivery and the early postpartum period make important contributions to the woman's sense of mastery. The consequences of her experience in these areas either add to or diminish her sense of mastery. Shainess further indicated that a loving or rejecting maternal attitude evolves out of a matrix of what a woman is, and the situation of her life, as well as the conditions of pregnancy and delivery itself.

Programs for childbirth education using psychophysical methods are designed specifically to change attitudes toward childbirth and consequently the behavior of the woman in the process of parturition. They are further designed to enhance the woman's control in the process of childbirth and to enable the period of childbearing to be positively meaningful to the woman through her conscious active participation.

Read (1953) noted clinically that the psychological condition of the woman often interfered with the physiological laws of parturition. He thus sought means of attenuating the woman's psychological state and to develop obstetric techniques that would function as an adjunct to natural physiological laws within the context of a reassuring atmosphere. Read (1953) emphasized that fear interfered with normal obstetric functioning. Therefore, he sought means of modifying negative attitudes and eradicating culturally induced fears. To accomplish this he instituted a combination of education to dispell unfounded fears and Pavlovian classical conditioning to decondition a negative response to childbirth and recondition a positive response.

Psychological techniques as an alternative to anaesthesia in childbirth which were also based on Pavlovian conditioning were developed in Russia and introduced to France by Dr. Fernande Lamaze. These techniques are taught in the United States as the Lamaze Method (Bing, Karmel and Tanz, 1961). As this method has been used and studied, differences between women trained for childbirth and those not so trained have emerged. Measurable differences have generally been in terms of amount of anaesthesia required, length of labor, loss of blood and general condition of the infant as reflected in the Apgar (1965) rating of respiration, skin color, heart rate, reflex irritability and muscle tone (Thoms and Karlowsky, 1954; Miller, 1961; Van Auken,

1971). Clinical impressions of the women made by physicians describe them as finding the experience more fulfilling, more satisfying and as being more cooperative (Van Auken, 1971; Miller, 1961).

Reports of the childbirth experience by women trained for childbirth by psychophysical methods have often been given in terms of joy, personal growth and fulfillment (Chabon, 1966; Read, 1953) or as a highly positive peak experience (Tanzer, 1968).

It is self-evident that the woman who experiences pregnancy and the giving of birth is the same woman who rocks the cradle. If she has anxiety in pregnancy and during the birth process does she not carry anxiety into the postnatal phase? If she is self-confident in pregnancy and delivery does she not carry this into the postnatal phase? If she learns to be self-confident in pregnancy does she also carry this into the postnatal phase? If she rejects pregnancy does this not carry over into a postnatal rejection of the product of pregnancy, i.e., the baby? If she learns to accept her pregnancy does this not carry over into an acceptance of the product of pregnancy, i.e., the baby?

The problem which this study proposes to investigate is the relationship between psychophysical training for childbirth and maternal attitudes. Specifically, the major question is, do courses designed to alter the attitudes and

behavior of women toward childbirth also alter their maternal attitudes?

Significance

If it can be demonstrated in this study that psychophysical techniques designed to alter attitudes toward childbirth are related to maternal attitudes, then some understanding of part of the variability of maternal attitudes may be obtained. The desirability of universal parenthood training has been suggested (Hawkins, 1971). This study is a step in the direction of identifying factors that influence parental attitudes and could contribute to the formation of courses in parent education.

Assumptions

A major assumption of this study is that the content of the Lamaze classes as taught in Greensboro consists of the standard Lamaze techniques advocated by the American Society for Psychoprophylaxis in Obstetrics. It is further assumed that there is no difference in the effect of teachers of the several classes taught in Greensboro.

Finally, it is assumed that these techniques of deconditioning and reconditioning are successful in changing negative attitudes toward childbirth into positive attitudes.

Hypotheses

The following hypotheses will be tested. These hypotheses are stated in the alternative form.

1. There will be differences as measured by the Parent Attitude Inventory in maternal attitudes of women trained for childbirth by Lamaze techniques and women not so trained.

2. There will be differences as measured by ten concepts on a semantic differential in maternal attitudes of women trained for childbirth by Lamaze techniques and women not so trained.

Definition of Terms

Lamaze Method. Techniques of deconditioning negative attitudes toward childbirth and reconditioning positive attitudes toward childbirth (See Appendix A).

Maternal Attitude. In this study maternal attitude was considered those aspects measured by the Parent Attitude Inventory and a semantic differential.

Psychophysical. Psychological conditioning and physical exercises geared to the training of women for conscious participation in the birth of their child. In the literature this includes Lamaze techniques, Read techniques or any combination thereof.

Limitations

The major limitation of this study is the inability of the experimenter to randomize assignment of the subjects to childbirth education classes. However, statistical procedures have been used both to assess incidence of selection bias operating and to control for such.

Another limitation is the use of instruments to measure attitude. There is always a question of the degree to which self-reports reflect actual practice. Thus we are limited to parental attitudes as measured by the Parent Attitude Inventory and the concepts selected for the semantic differential.

A third limitation is that focusing the investigation on the mother precludes the interactional effect of mother/father/child. Ultimately the child must be accepted by both parents. However, for the sake of a structured study, parameters must be drawn and the decision was made to exclude the husband from the study.

CHAPTER II

REVIEW OF LITERATURE

A search of the literature revealed both theoretical speculation and empirical data. This review considered four aspects of the problems. The first aspect dealt with pregnancy as a developmental phase from a psychological frame of reference. Second, data on childbirth education were considered. Third, the general area of maternal attitudes was reviewed. Finally, studies dealing with the relationship between attitudes in pregnancy and attitudes and behavior toward the infant were examined.

These categories are necessarily arbitrary. For the woman proceeding from pregnancy through childbirth into parenthood, there is no sharp demarcation of stages but rather all phases are part of a total biological process. In a comparable manner, the studies reviewed were sometimes difficult to classify depending on where they dipped into the ongoing process, and how far they followed it.

Pregnancy

The study of pregnancy from a psychological point of view has resulted in three types of information: (1) theoretical, based primarily on Freudian psychodynamics;

(2) clinical investigations of these ideas; and (3) empirical investigations.

Despite its importance, investigations into the psychology of pregnancy have been hampered by the total medical management of the period of pregnancy and childbirth. Illsley (1967) stated that both laymen and professionals tended to regard childbirth as a clinical phenomenon governed by physiological laws, guided by obstetric techniques and virtually unaffected by social and psychological processes and events.

Psychoanalytic theory has focused on the mother as a central figure in the psychic life of the individual. Similarly, in the psychic life of the woman herself, childbearing is of major importance. Freud (1959) considered the production of a child important in the successful resolution of both penis envy and the oedipus complex. Deutsch (1947) stated that motherhood was the chief goal and most creative experience for a normal woman who had reached true maturity, although she qualified this statement by a further assertion that this maturity was almost a myth in our time. Erikson (1950) conceived of the seventh stage in his Eight Ages of Man as Generativity. His conception was developmental and the crisis in this period was between generativity and stagnation.

Several authors have attempted to define the developmental processes involved in pregnancy from the psychoanalytic

point of view. Bibring, Thomas and Dwyer (1961), in an attempt to define the psychological processes in pregnancy, concluded that pregnancy was a period of crisis involving profound psychological changes. In this period of developmental crisis specific adaptive tasks confronted the individual. These tasks were often diametrically opposed to the central tasks and functions of the preceeding phases. The characteristics of this crisis are that it:

1. revives and unsettles psychological conflicts of earlier developmental periods
2. is a turning point in the life of the individual involving a biological change from which there is no return

Mastery of this phase depends on the outcome of the crisis in terms of solution and maturational reorganization of the disequilibrium caused by the crisis. By this was meant the attainment of motherhood through pregnancy.

Jessner, Weigert and Foy (1970) discussed the results of two clinical investigations into the processes of the development of parental attitudes during pregnancy. These authors stated that pregnancy entailed a sequence of transformations. The most important of these transformations was biological with its concommittant psychological changes. These psychological changes were primarily in the woman's perception of herself in terms of her relation to the world, to past and future generations and separateness from others.

The crisis nature of the period of pregnancy was noted in the frequent ambivalent feelings that the woman felt toward the fetus.

Rubin (1967a, 1967b) sought to identify the processes and operations in the period of pregnancy by way of empirical investigations. She conducted a study which was essentially a biological field study to determine how the maternal role was acquired. The questions investigated were: What are the processes in attainment of the maternal role and, Who are the models or referrents for maternal role expectations? Rubin found that during the period of pregnancy women were searching for models and incorporating role expectations. Five operations in attaining role identity were identified in addition to the final step of identity achievement. The five categories of operations represent two forms of taking-in and two forms of taking-on, as well as one form of letting-go of a former status or role. The two forms of taking-on behavior which Rubin identified were mimicry and role play. Mimicry is defined as the adoption of simple behavioral manifestations such as dress, speech affects and gestures that are recognizable symbols of the status the subject wished to obtain. Role play went beyond mimicry into an acting out of what a person actually might do in a situation. Rubin noted that women becoming mothers for the first time tended to find an object for role play in

their environment. This object was usually a young child with whom they established a relationship.

The second group of operations Rubin identified as taking-in. These she labeled fantasy and introjection-projection-rejection. Although fantasy was a part of role play, on the level of pure fantasy there was no acting out. In this operation the stereotypes of mimicry and role playing were replaced by material relevant to the individual person. The range of possibilities for behavior broadened. Wishes, fears, day dreams and dreams increased and were considered indications of a deepening in involvement. While mimicry and role play indicated an identification with the mother or other maternal model, fantasy was an operation in which identification with the fetus came to the fore. Introjection-projection-rejection was the final taking-in operation and consisted of a discriminatory form of modeling, similar in content to mimicry, but different in operation. Mimicry was considered a slavish copying of discrete behaviors, whereas in introjection-projection-rejection the behavior or event of the model was matched for "fit" with the behavior or event that the subject was experiencing. If the fit was good, it served as a reinforcement. If it was unsatisfactory it was rejected. For example, the woman observed what friends were experiencing in pregnancy, if it was the same as her fantasy or experience, it served as a reinforcement for her behavior if not it was rejected.

Interestingly, Rubin (1967a) found that once an item was incorporated it was almost impossible for anyone to get the woman to abandon or reject it. The circular process of introjection-projection tended to bind in role traits firmly.

Rubin's study involved five primiparas and four multiparas studied in depth throughout their pregnancies and for the first month after their delivery. Additional subjects were obtained from the same patient populations for one or two interviews each, thus giving a cross sectional view as well as a longitudinal one. There were 25 such interviews with additional primiparas in their fifth to fortieth weeks of pregnancy and 57 interviews with primiparas during their postpartal period. For multiparas, 42 interviews were held during the eighth through the fortieth weeks of pregnancy and 32 interviews postpartally. All interviews were obtained while subjects were in the particularistic life-space situation. Data were collected by graduate nurses in uniform. Items of data consisted of reports of status change, prospective, retrospective or current by the subject. For example, any reference to how a subject was going to do things differently, or was planning to do with the baby was judged to be a status change and recorded as an item of data.

Childbirth Education

In reviewing the literature on childbirth, this writer has attempted first to place childbirth within the cultural setting of Europe and America and within this setting to cite the rationale for childbirth preparation and finally, to recount empirical findings.

Mead and Newton (1967) noted that the experience of childbirth is viewed differently in various cultures. The specific attitude of a people appears to be a product of cultural conditioning. These differences in perception range from childbirth as illness or normalcy; as an open sexual event or cloked in shame or secrecy; as meriting pay and praise or dirt and defilement; or as having supernatural involvement. For those immersed in their own culture, it is sometimes difficult to conceive of other ways of handling the event of childbirth. Mead and Newton further contend that all cultures control the behavior of members involved in the process of reproduction. Thus the culture fosters the behavior and attitudes prevalent among a particular people.

Historically in western civilization assistance in childbirth remained predominately a feminine prerogative until about the seventeenth century. Generally men had neither the skill nor desire to assist at childbirth, and in some periods men were actually prohibited by custom and law

from giving such assistance (Committee on Prenatal and Maternal Care, 1932).

In the United States in 1935 only 37 per cent of births took place in hospitals, while in 1964 the percentage was 97.4 (Womble, 1966). Stated in another way, in 1935 63 per cent of births took place in the home within the context of the family, sometimes with a doctor attending, sometimes with a midwife, perhaps with the husband assisting. In 1929 there were approximately 47,000 women in this country who acted in the capacity of midwives, 5,000 of whom were in the state of North Carolina (Committee on Prenatal and Maternal Care, 1932).

In the ensuing years a massive shift has occured, in this country, in the cultural patterning of childbirth behavior. The cultural attitude toward childbirth prevalent by mid-twentieth century was that childbirth was a mechanical procedure. Medical management dictated that the woman be separated from her family, give birth in a hospital and be separated from her baby while there. In the hospital setting women could be relieved of the discomforts of childbirth by anaesthesia and know nothing of the event. Medical intervention carried a belief in the medical relief of suffering of childbirth through chemical means and the companion belief that any woman not given the comfort of anaesthesia had been cheated (Rosenberg, 1944). Rosenberg (1944) noted that many women found the ordeal of being

unconscious for the birth of their child and separated from husband, baby and family for 10 to 12 days at this crucial time very difficult and anxiety provoking.

In reaction to such complete medical management, an alternative to anaesthesia was introduced by Dr. Grantly Dick-Read in England. Read (1953), a sensitive clinician, noted the extreme range of reaction to the experience of giving birth. Often the women were filled with dread and fear, but an occasional woman seemed to conquer her fear and find joy in the experience. Read reasoned that this ecstasy must be what nature intended woman to experience, the attainment of which was, too often, obscured by fear and ignorance. Fear, Read postulated, came from the many tales of horror recounted to young girls and could only be counteracted by correct knowledge. Thus, Read developed a technique for reeducating women for childbirth on the premise that a patient entering pregnancy, labor and delivery with fear and apprehension will experience a considerable amount of discomfort during the process of parturition. His solution was: Education for Childbirth. Read stressed that childbirth was a normal physiologic process and as such should not be accompanied by severe discomfort. Pain, he postulated, was a result of a fear-tension-pain cycle. Using the classical conditioning paradigm, he reasoned that if fear could be replaced by positive educational experience, the cycle ending in pain would be broken and women could

experience childbirth as the spiritual achievement which nature intended it to be. His method was labeled "Natural Childbirth" and hailed as the salvation of womankind.

Read (1953) developed a format for antenatal classes, as well as techniques for breaking the fear-pain response. The method developed by Dr. Read consists of two parts: education and relaxation. The woman was instructed in the facts of reproduction designed to combat fear and drilled in specific techniques of relaxing as an antidote to tension. Read reported success with this method and that women so trained were able to overcome their fear of childbirth and during labor and childbirth exhibited behaviors quite different from women uneducated and untrained. Studies evaluating the success of this method with numbers of women will be reviewed later.

Read (1953) postulated a direct relationship between conscious participation of the woman in the birth of her child and maternal affect. He stated the belief that experiences of mother and child in the birth process served as a foundation for mother love.

Physicians in Russia began to experiment with an extension of the conditioning phenomena. Based on Pavlovian theory, techniques were worked out to decondition pain expectation and to positively condition women to avoid the perception of pain. This technique known as psychoprophylaxis was modified and introduced into France by Dr. Fernande

Lamaze in 1951. It was publicized as the Lamaze Method in the United States by Karmel (1959).

In 1960 a group of physicians, nurses, physiotherapists and patients founded the American Society for Psychoprophylaxis in Obstetrics (ASPO) which disseminates literature on the method and certifies teachers. Psychoprophylaxis as taught by ASPO consists of the following sequence:

1. Deconditioning--this phase is accomplished by education and is geared to break the conditioned association between uterine contraction and pain, i.e., labor is always referred to as labor contractions, never as labor pains.
2. Reconditioning--a new beneficial conditioned response is instituted as the response to the perception of the uterine contraction. This new response substitutes a precise respiratory exercise in place of the previous reflex "pain." Thus to the stimulus, "contraction," the response "pain" is replaced by the response "breathe" (Bing, Karmel, and Tanz, 1961).

The major difference in the Read and Lamaze techniques was in the precision of the breathing techniques developed in the Lamaze method, as well as more numerous breathing patterns. This diversity gave the woman a greater ability to retain control when the intensity of contractions

mounted. The term psychophysical was applied to either method of childbirth preparation involving psychological conditioning and physical exercises geared to the training of the women for conscious participation in the birth of her child.

As women have given birth to their children by psychophysical methods reports by the women frequently mention not only that they were able to suffer through childbirth without anaethesia, but that they actually experienced pleasure, exhilaration and joy in so doing. Vellay (1960) who worked with Lamaze and continued his work on psychoprophylaxis observed that the method seemed to release psychological tensions and so to be curative from the psychological point of view. He stated that the woman studies herself, discovers her problems and finds a solution. Vellay stated that the method, "goes beyond pure obstetrics. It is a woman's victory, and it transforms their position in the family and society (p. 9)."

The literature of "Natural Childbirth" abounds with such statements, yet very little investigation has been made into the psychological effects of such training procedures. One study which attempted to do this was conducted by Tanzer (1968). This study investigated the affective experience of women trained for childbirth and those having no particular psychological or physiological training. Tanzer concluded that there was considerable difference in the perceived

experience between the two groups. Those women trained for childbirth described joy, excitement, feelings of continuity and positive first contacts with their babies. The group having no training for childbirth described negative emotions, a gap in continuity, and fearful and unpleasant memories of the anaesthetized period as well as of the anaesthesia itself. The experimental group also had more positive feelings towards their husbands as well as raised self-esteem.

She did not follow up the relationship of the women with their infants to determine if these differences were carried over into the mother-infant relationship.

Several studies have investigated the effects of childbirth education for groups of women prepared for childbirth by psychophysical means. In most of these studies statistical data are restricted to medical aspects such as length of labor or the Aggar score of the infant. Clinical comments, however, often report the women find the experience "more satisfying."

Thomas and Karlovsky (1954) studied 2,000 trained deliveries under a Training for Childbirth program at Yale University Hospital. Their conclusions were that labors were shorter, number of depressed infants at birth decreased, there were fewer operative deliveries, less blood loss, smoother convalescence and finally happier mothers. The method evaluated in this study was the Read method. In a

later study of 641 primiparas also conducted at Yale University Hospital, Davis and Morrons (1962) compared four groups of women. The groups consisted of those women who had been prepared for childbirth in prenatal classes and supported in labor, a group who had only been prepared, a group who had only been supported in labor and a group who had neither been prepared nor supported. The results indicated no difference in the groups in length of labor or amount of sedation or anesthesia. There were, however, significant differences between those women who were interested in and attended classes and those who were not. Those who attended classes were older, better educated, from a higher occupational group and had fewer expressed fears about childbirth.

In explaining the conflicting results in 1954 and 1962 the authors suggest that the overall effect of the Natural Childbirth movement may have been to reduce the amount of anesthesia routinely given to women. Thus doctors in 1962 gave unprepared women less anesthesia than comparable women were given in 1954.

In investigating the recurrent criticism that psychophysical methods of childbirth are an upper-class phenomenon, Van Auken (1971) investigated the usefulness of these methods in underpriviliged primigravid patients. The subjects were 1,000 women with an average age of 18.5 years. The results showed an average labor of 10.5 hours. Only 31

infants had an Aggar index of seven or below. There was no fetal loss and no maternal mortality. Of the 1,000 deliveries, 19 required no analgesia and most delivered with saddle-block. The clinical evaluation was that the women were more cooperative, less noisy, needed less analgesia and were easily motivated at the suitable time to bear down properly.

Miller (1961) in a study of 4,733 prepared deliveries concluded that prepared patients had shorter labors, lower morbidity and less blood loss. Babies were more alert and deliveries were less complicated. Miller also commented on the emotional experience of the prepared women. From a clinical observation, it was concluded that those women who actively participated in the delivery found the experience emotionally gratifying.

Psychophysical methods of childbirth have been slow in being accepted in the United States. The moving force behind their spread has been women who requested the method and a few professionals who saw the significance of such methods. Research has dealt mainly with the medical aspects in terms of length of labor, loss of blood, condition of infant, or incidence of forceps. Data dealing with the quality of the experience for the women have been largely clinical and anecdotal. This reviewer was unable to find a study relating the experience of the woman in childbirth by this method to her subsequent relating to the infant.

Maternal Attitudes

This review of maternal attitudes was by no means an attempt at an exhaustive one. The facet of maternal attitude focused upon was the acceptance/rejection dimension.

The biological fact of motherhood does not automatically convey the maternal attributes of a giving, loving, protective person. The biological road to parenthood is the same for all. Parenthood and its psychological ramifications, however, are idiosyncratic and as yet poorly understood. It is generally accepted that for humans maternal behaviors are far more shaped by experience than determined by innate factors. Shainess (1963), in discussing the maternal attitude, indicated that it evolves from a multiplicity of factors which converge to form an attitude basically loving or rejecting. Shainess referred to the factors of the personality of the mother, her attitudes toward femininity, her values and philosophies, her relationship with her husband and the degree of security derived therefrom, how welcome the pregnancy is and the motivations for it, as well as the conditions of the pregnancy, delivery itself and the early postpartum period.

There seems to be little doubt of the far-reaching consequences of the relationship between mother and child. Half a century of child research has yielded an almost endless list of variables in the child which are influenced by parental attitudes. Emerging from the voluminous data is

the implication that the significant element of parental care is its acceptance/rejection dimension, rather than any specific practice in child care (Schaefer, 1959; Bayley and Schaefer, 1960; Becker, 1964; Hurley, 1965).

Sears, Maccoby and Levin (1957) in an extensive study of 379 mothers of kindergarten children found the warmth factor to be pervasive and to be associated with every measure of child behavior except dependency. This factor was not the major focus of the study, and the authors were at somewhat of a loss to explain it. The major focus of the study was descriptive, that is to give a picture of actual child-rearing patterns that existed in American middle-class families at mid-century.

Schaefer (1959) attempted to order maternal variables using concepts that described molar social and emotional interactions. Data from various studies were used and ordered by factor analysis as well as a related model called the circumplex, originally suggested by Guttman (1954). The circumplex model enabled the data to be organized in a circular manner, rather than a linear one. Schaefer stated that maternal behavior can be described as two dimensional, each dimension being bipolar. The two dimensions extracted from the data by factor analysis were Autonomy versus Control and Love versus Hostility. In the first dimension one pole contained Autonomy and the opposite pole contained anxiety of the mother, intrusiveness, concern about health,

achievement demand, excessive contact, fostering dependency and emotional involvement. The positive pole of the second dimension was positive evaluation of the child, equalitarianism, and expression of affection. The negative pole of this dimension was ignoring, punitiveness, perceiving the child as a burden, strictness, use of fear to control, punishment and irritability. Schaefer noted that his dimension of Love versus Hostility was similar to other descriptions of Acceptance versus Rejection.

Bayley and Schaefer (1967) used the circumplex model to analyze the data from the Berkley Growth Study. This study was an ex-post-facto attempt to organize the social-emotional information from the study. Maternal records were converted into objective scores and recorded on a Maternal Behavior Research Instrument. Over a 10 year period the dimension of Love/Hostility was found to be stable, but not Autonomy/Control. In correlating maternal attitudes and behaviors with child personality characteristics over a period of time, a very complex relationship became evident. Most important, perhaps, was the emergence of clear sex differences. The rating of a loving mother was most clearly correlated with personality characteristics of boys. The pattern for girls was less clear and the suggestion of further study of sex differences was made.

Other studies have found that parental attitudes consist of more than two dimensions. Becker, Peterson, Luria,

Shoemaker and Hellmer (1963) found that the factors Child-rearing, Anxiety, use of Physical Punishment, Sex Anxiety and Strictness (Sex and Aggression) contained two dimensions rather than the single one of Autonomy-Control. This conception gave parental attitude three dimensions rather than the two found by Schaefer of Love-Hostility and Autonomy-Control. In this three-dimensional conception the dimension of Warmth versus Hostility was comparable to Schaefer's Love versus Hostility. Autonomy versus Control, however, was sub-divided into two dimensions: Restrictiveness versus Permissiveness and Anxious-Emotional Involvement versus Calm Detachment. The dimension of Warmth versus Hostility (Becker, et al., 1963) contained the following factors for the Warmth pole: Accepting, Affectionate, Approving, Understanding, Child-centered, frequent Use of Explanation, positive Response to Dependency behavior, high use of reason in discipline, high use of praise in discipline, low use of physical punishment and (for mothers) low criticism of husbands. The Hostility pole was defined as the opposite of these factors.

These three dimensions were derived in a manner similar to that which Schaefer used. Becker (1964) compiled the data from several studies and, through a series of factor analyses, three dimensions were extracted. Becker was primarily interested in the consequences of parental discipline. Becker noted that affectional relations between parent and

child were correlated with the use of certain kinds of discipline. The use of praise and reason have been repeatedly found to be associated with warmth variables, and the use of physical punishment with hostility.

Medinnus and Curtis (1963) conducted a study of the relationship between maternal self-acceptance and child acceptance. The hypothesis investigated was that there was a significant positive relation between self-acceptance and child-acceptance in a nonclinical group of mothers of young children. Subjects were 56 mothers of nursery school children. The subjects were given two measures of self-acceptance and one measure of child-acceptance.

The self-acceptance measures were the Bills Index of Adjustment and Values and a semantic differential scale of 20 bipolar adjectives on which the mothers were asked to rate the concepts of Me (as I am) and Me (as I would most like to be). The measure of child-acceptance consisted of the same set of bipolar adjectives rated on the concepts of My Child (as he is) and My Child (as I would most like him to be).

The results revealed a positive relationship between maternal self-acceptance and child-acceptance. The correlation between Bills self-acceptance and child-acceptance was .48, a correlation significant at the .05 level. The correlation between the two measures of the semantic differential

reflecting self-acceptance and child-acceptance was .33, significant at the .05 level.

Hurley (1965) investigated the relationship between parental acceptance/rejection and children's intelligence. This study was from a learning theory frame of reference and theorized that rejection constituted aversive stimuli. Therefore rejection from the person who controlled love and food (the parents) would result in extinction of approach responses. Simultaneously rejection would result in the acquisition of avoidance responses. Hurley theorized that avoidance might include "stopping thinking" responses.

The study correlated IQ scores as measured by the California Test of Mental Maturity with three measures of parental acceptance. The subjects were 143 third-grade children. The first measure of parental acceptance was a questionnaire called Manifest Rejection. It was concerned with the general inclination of the parent to endorse a "tough" disciplinary policy. Two separate measures of the parent's tendency to punish children were obtained through interview. A Punishment Index of the kind of punishment the parents actually used and a projective estimate of the rating of various kinds of punishment were obtained.

The results revealed an inverse relationship between parental rejection and IQ scores. This was especially true with daughters. While negative correlations of child's IQ with parent's Manifest Rejection, punishment used and

judgment of punishment were all negative, only those for girls were significant beyond the .05 level. The correlation of daughter's IQ and father's rejection was -.29; daughter's IQ and father's judgment of punishment r = .30. All measures for mother's were inversely correlated with daughter's IQ. These Pearson product-moment correlations were: daughter's IQ and mother's rejection r = -.46 ($p < .001$); daughter's IQ and mother's use of punishment r = -.41 ($p < .01$); daughter's IQ and mother's judgment of punishment r = -.40 ($p < .01$).

Although all correlations for both mothers and fathers and sons were negative, none were statistically significant. The correlation of son's IQ and father's rejection was -.08; son's IQ and father's use of punishment r = -.26; son's IQ and father's judgment of punishment r = -.15. The correlation of son's IQ and mother's rejection was -.23; son's IQ and mother's use of punishment r = -.03; and son's IQ and mother's judgment of punishment r = -.16.

All of these studies have been correlational and as such very tentative in terms of cause and effect relationships. Nevertheless, the data seem to indicate that the factor of the warmth or acceptance of the child by the mother, or both parents, does have a relationship to functioning and characteristics of the child.

Prepartal and Postpartal Attitudes

Several investigators have been interested in the question of the consistency of attitudes and behaviors from the prepartal to the postpartal period. Davids and Holden (1970) investigated the consistency of maternal attitudes and personality from pregnancy to eight months following childbirth. The subjects were 42 women in their third trimester of pregnancy to eight months postpartum. The sample was randomly selected from a larger random sample of women participating in a national collaborative project. The subjects were given the Parental Attitude Research Instrument (PARI) while pregnant and again approximately a year later. A clinical evaluation of mother personality and interaction with the child was obtained at eight months postpartum.

The results indicated a significant correlation between measures of maternal attitudes toward family life and child rearing in pregnancy and the same measures eight months after childbirth. By factor analysis the Parental Attitude Research Instrument was divided into two main scales: Hostility and Control. The Hostility scale contained the subscales Marital Conflict, Irritability and Rejection of Homemaking, while the Control scale contained the subscales Ascendancy, Intrusiveness and Deification. An objective score was obtained for both of the two main factors and a total negative attitude score derived by adding the scores for Hostility and Control. The correlation of the

PARI administered antepartum and the same instrument administered postpartum was significant at the .01 level. For the Hostility factor prepartal and postpartal r = .54; for the Control factor, prepartal and postpartal r = .80. When the two factors were combined into a total score, the prepartal and postpartal r = .72.

Correlations between PARI scores in pregnancy and follow-up personality ratings revealed a positive correlation of .44 ($p < .05$) between postpartal anxiety and prenatal negative family and child-rearing attitudes. Similarly a correlation of .55 ($p < .01$) was found between prenatal negative attitudes and postnatal depression. Negative prenatal attitudes were negatively correlated (-.33, $p < .05$) with favorable ratings of the mother/child interaction at eight months postpartum.

The authors noted that a large proportion of variance in attitude is unexplained in these correlations and some individuals obtained very different attitude scores on the two occasions. It seems reasonable that the experiences in the latter part of pregnancy and childbirth might contribute to this variation.

A study by Crowther (1965) was concerned with prediction of maternal behavior from prenatal maternal attitudes. The study was conducted at the Philadelphia Child Guidance Clinic. The subjects were randomly selected from pregnant women attending the Pennsylvania Hospital Ante Natal Clinic.

The study was based on the theory that the periods of pregnancy and early childrearing were states of maturational and developmental crisis and that the adaptive capacity of the individual is of utmost importance. It was further assumed that adaptive behavior in pregnancy would result in an unstressful pregnancy and uncomplicated labor and delivery. It was hypothesized that adaptation and mastery in pregnancy would be predictive of childrearing behavior.

The study developed a clinical tool for evaluating maternal trends, rather than being a statistical study. No statistics were given. The method was the clinical interview. The author reported that by this method adaptive trends in pregnancy, usually reflected in preparation for the child, were predictive of how well the child would be accepted and the mastery that the woman would achieve in the childrearing tasks.

Schaefer and Manheimer (1960) in comparing antepartal and postpartal attitudes of women found that women who were fearful about the baby or themselves during pregnancy tended to be fearful, self-blaming and insecure in the care of their infants and to need much reassurance. Schaefer and Manheimer developed the Pregnancy Research Questionnaire (PRQ) to assess the psychological adjustment of women to pregnancy as well as the Postpartum Research Inventory to assess adjustment to the baby. The PQR yielded scores on the following factors: Fears for Self, Lack of Desire for

Pregnancy, Dependency, Fears for Baby, Irritability and Tension, Lack of Maternal Feelings, Depression and Withdrawal, Lack of Health During Pregnancy, and Lack of Health Before Pregnancy.

Two scales were developed on the Postpartum Research Inventory. The first scale, named Extrapunitiveness, consisted of Negative Aspects of Childrearing, Irritability and Depression. The second scale was named Intropunitiveness and included Fear or Concern for the Baby, and Need for Assurance.

The results revealed that Fears for Self in pregnancy were correlated with the Intropunitiveness cluster. The correlation was .67 ($p < .05$) for multigravidia and .62 ($p < .05$) for primagravida. Fears for Baby in pregnancy were correlated with the same cluster. The correlation coefficients were .46 ($p < .05$) for multigravida and .56 ($p < .05$) for primigravida.

Ferreira (1960) investigated the pregnant woman's emotional attitude and its reflection in the newborn. This study focused on an attempt to demonstrate the existence of a prenatal psychological environment. Specifically, the investigation examined the relationship between deviant or "upset" behavior in the newborn and the mother's prenatal "negative" attitudes toward pregnancy and the baby-to-come. The measure of the women's emotional attitude was seven scales from the Parental Attitude Research Instrument

(Martyrdom, Dependency, Marital Conflict, Inconsiderateness-of-Husband, Irritability, Rejection of Homemaking Role and Fear of Harming the Baby). One other scale was constructed by the author to measure rejection of pregnancy. The criterion scores were Fear of Harming the Baby and Rejection of Pregnancy.

The mother's attitudes were measured in the prenatal period, and correlated with ratings of the babies in terms of "deviantness" after the birth of the child. On the basis of observation by the nurses in the newborn nursery the babies were classified as deviant or normal. Mothers of deviant babies scored significantly ($p < .025$) higher on the scale of Fear of Harming the Baby than those women whose babies were not classified as deviant. In this study mothers of deviant babies scored either extremely high or extremely low on the scale Rejection of Pregnancy. Zemlick and Watson (1963) reported similar findings in that women who rejected pregnancy were oversolicitous in subsequent interaction with their offspring. These findings suggested that the relationship between psychological attitudes and acceptance of the infant may have an inverted-U shape rather than being a linear relationship.

This study by Ferreira was questionable on two counts. First, the scale Rejection of Pregnancy being ad hoc, was questionable as to exactly what it was measuring. Second, the behavioral measures of the infants' deviation

was retrospective and collected only once in twenty-four hours.

Zemlick and Watson (1953) studied 15 primiparas throughout pregnancy and into the postpartal period in order to investigate the relationship between attitudes in pregnancy and postpartum adjustment and attitudes toward the child. In this study measures were obtained on (1) acceptance/rejection of pregnancy, motherhood, feminine role and sexuality, (2) degree of anxiety and (3) tendency to somatization. These measures were obtained by an attitude questionnaire, projective tests (TAT) and a psychosomatic symptom inventory. The criterion variables were then correlated with the woman's adjustment during pregnancy, her adjustment during labor and delivery as rated by an obstetrician and her relationship to the newborn child. Attitudes, anxiety and psychosomatic symptoms measured in pregnancy were positively correlated with adjustment during labor and delivery. Attitudes of rejection during pregnancy were found to be negatively related to the quality of the mother's postpartum adjustment and mother/child interaction as measured by behavior samples.

This study by Zemlick and Watson was well-designed methodologically in that the criterion measures were actual behavior samples. However, it is questionable that the ratings of the obstetrician adequately measure the adjustment of the woman in either pregnancy or labor and delivery.

This study reflected the approach to the period of pregnancy as a purely medical event. For example, if the woman kept her appointments and did not complain, she was rated well-adjusted.

This review has focused on the psychological aspects of pregnancy and childbirth and their place in a continuum extending from pregnancy to the postpartal period. An attempt was made to demonstrate that pregnancy is a developmental phase and, as such, a time of psychological crisis in which maternal role expectations are adapted.

Childbirth was seen as a social and psychological event. Childbirth education was reviewed in terms of its development and major practitioners, the Read method and the Lamaze technique. It was noted that although the basis of childbirth education was psychological, evaluations have been most often in physical and medical terms.

The general area of maternal attitudes was reviewed in terms of its acceptance/rejection factor and the importance of this dimension to the child. Finally longitudinal studies relating prenatal and postnatal measures were considered.

CHAPTER III

METHOD

In conducting research in a natural setting limitations are often placed on experimental control in terms of ability of the experimenter to randomly assign subjects to groups. Campbell and Stanley (1963) cogently present the hazards of field research; however, they also conclude that the risks are worth taking in attempting to introject experimental thinking and methods into this area. The hazards are especially great when the experimenter not only is unable to assign subjects randomly but also when the groups are self-selected. The experimenter then has two choices: he can avoid investigating the problem or he can use the tools available even though he may "see through a glass darkly." The present experimenter has chosen the latter.

Campbell and Stanley refer to research lacking full experimental control as quasi-experimental and stress that users should be aware of limitations in interpretation. Nevertheless, these authors encourage applied research and Kerlinger (1967) suggested that only through science can we assuredly replace existing methods with superior ones rather than replacing them with an equally inferior fad. Thus, the present study is quasi-experimental but one in which, perhaps, some understanding beyond correlation of the

relationship between prenatal education and maternal attitudes can be gleaned.

Design

The design for this study was the nonequivalent control group design suggested by Campbell and Stanley. The present design consisted of an experimental group and a control group both given a pretest and a posttest, but was one in which the control group and the experimental group did not have pre-experimental sampling equivalence. According to Campbell and Stanley, "the addition of even an unmatched or nonequivalent control group reduces greatly the equivocality of interpretation (p. 47)." In the present study the experimental group was self-selected to receive treatment. Treatment consisted of instruction in Lamaze techniques for childbirth education. The control group was selected from the same population of women but was restricted to those who had not chosen the treatment. The Lamaze classes were available for all subjects. All doctors that this researcher contacted had the information concerning the method and classes. This information was available to all patients who came to their office. No information was gathered on the basis for self-selection; however, this factor will be discussed in Chapter V as it is this unknown which qualifies the interpretation of data.

In an effort to achieve comparability between the groups insofar as possible, the control group was matched to the experimental group on the factors of race, marital status, socio-economic level, age and whether this was a first birth or a later birth. The pretest and posttest measures consisted of the administration of two measures of attitude. These were the Parent Attitude Inventory (Pittfield and Oppenheim, 1964) and a semantic differential. The pretest was administered approximately six weeks prepartum and the posttest approximately six weeks postpartum.

The treatment variable was a relatively standardized technique. The structure of the classes were standardized by the American Society for Psychoprophylaxis in Obstetrics (ASPO) in terms of material covered, techniques taught and methods of deconditioning negative attitudes and reconditioning positive attitudes. The classes offered in Greensboro were taught by teachers certified by ASPO. The class consisted of six weekly sessions for women in the last trimester of pregnancy.

Control of Variables

Complete experimental control was not possible as the treatment (Lamaze training) was self-selected by the experimental group. The presence of a control group, even though nonequivalent, exerted control for some factors. Presumably, maturation affected all subjects equally since the

groups were of comparable age and all subjects experienced pregnancy, birth, and a normal baby. The factors of testing and instrumentation were assumed to affect both groups equally; however, the groups were not matched on education, and it may be that the effect of a paper-and-pencil test was different for those women with less (or more) education. On the other hand, the educational level was three years of high school or more for all subjects. At this level it is not unreasonable to assume that a simple paper-and-pencil test was within the capability of all subjects.

The effect of history, or external current events, were assumed to affect both groups equally. That is, whatever the random effects were of living in Greensboro, North Carolina, in the United States in 1973, these effects were equally evident in both groups. In this study regression was assumed not to be a threat to validity since the subjects were not chosen on the basis of extreme scores and any regression present would equally affect both groups. The inability to control selection presents the possibility of the interaction of selection and any or all of the previously discussed variables. These factors deal with the internal validity of the experiment. The major drawback of the quasi-experimental design is the lack of external validity (Campbell and Stanley, 1963). Thus, the possibility of generalization is severely limited.

In the absence of complete experimental control, an attempt was made to exert statistical control through the use of analysis of covariance. This technique utilizes regression to ask what the difference between the means on the dependent variable would be if all subjects had had the same score (i.e., the mean) on the covariate. Pretest scores of the Parent Attitude Inventory and the Semantic Differential gave some evidence on selection bias in terms of the initial maternal attitudes. Selection bias on maternal attitude was tested for in the pretest. When a bias existed it was controlled statistically by using the pretest score as a covariate on each of the 30 variables. To control for the differences in educational level of the subjects, the factor of education was used as a second covariate. Thus, simultaneously the question was asked what the difference between the means on the dependent variable would be if all subjects had had the same score on the pretest and the same educational level.

Subjects

The subjects in this study were 56 pregnant women. Twenty-eight were women participating in Lamaze classes for childbirth education in Greensboro, North Carolina, and 28 were selected from the private practices of several obstetricians in the same city. Subjects were asked if they wished to participate in the study. Only those who agreed

to participate were used. The subjects were informed of the purpose, procedure and uses of the study insofar as possible in accordance with the ethical standards of the American Psychological Association. It was not explained to the subjects that the study was a comparison of women taking the Lamaze course and those not taking the course, as it was determined that this would severely bias the results. The subjects were assured that it was not a test, that there were no "right" or "wrong" answers and that we wanted their true feelings. (See Appendix G for cover letter to subjects)

The experimental group was comprised of those women selecting the Lamaze training for childbirth. Approximately 10 couples were enrolled in each class. Classes began every several weeks and were taught alternately by two teachers. All members of several classes who lived in Greensboro were asked to participate until the number of 36 was reached. This number of experimental subjects were administered the pretest.

The control group was obtained through several obstetricians from their patients who were not taking Lamaze training for childbirth. The experimenter had no control over the selection of these women. Obstetricians in Greensboro were contacted by telephone and then seen in person to solicit their aid in securing control subjects. The physicians agreed to do the initial screening for race, marital status and socio-economic level. The procedure

varied with the physician. One physician gave the experimenter a list of possible subjects from his files; a second physician had his nurse screen the patients, secure their willingness to participate and then a list of these women was given to the experimenter. A third physician had his nurse screen the subjects, and if their willingness to participate was secured, they were seen in one of his offices (See Appendix I for sample letter to physicians). It was emphasized that these women should not be coerced into participating. If they indicated that they were not interested they were thanked and no further persuasion was used. Many subjects in both groups indicated that they were pleased to participate and expressed the idea that it might be a learning situation for them.

The physicians were asked to select white, married women living with their husbands who were expecting a baby before the end of December. Since almost all of the experimental subjects were self-selected as Caucasians, it was decided to limit the study to white subjects. In addition, the Lamaze classes were primarily attended by couples, thus the control subjects were selected who were married and living with their husbands. The control subjects were further selected on the basis of no formal prenatal preparation other than traditional medical care. Although factors of age, education and parity are suspected as relevant varibles in maternal attitudes it was not possible to select the

control group on these variables. The information of age, education and parity was gathered for each group, evaluated and controlled statistically.

Pretest data were gathered on 36 experimental and 35 control subjects. More difficulty was encountered in securing the control than the experimental group. It was decided that the number of subjects in the two groups should be equal. It was possible to collect posttest data on only 28 of the original 35 control subjects. Two of the subjects were deleted for low formal education; two additional ones because they were more than a month late in delivering. One subject was deleted because her newborn was hydrocephalic; one subject could not be located; and one declined to participate further.

Pretest and Post data were collected on 31 experimental subjects. One of these was deleted because of medical problems of the infant: at six weeks, the child weighed less than at birth and this was judged abnormal development which could affect the score of the mother. Two subjects were randomly selected for deletion from those subjects with college education having their first child. This procedure was an attempt to bring the groups into equality on the factors of parity and education.

The final groups were found to be equivalent on the factors of age and parity, but not on education. The equivalency of the groups in age was determined by a t test

($t < 1.0$). The mean age of the experimental group was 25.75 and the mean age of the control group was 25.39. The range of age was greater for the control group, being from 19 to 38, while the experimental group ranged from 18 to 33. The standard deviation of the control group was 4.52 and the experimental group 3.67. In Table 1 these data are presented.

Table 1

Age of Subjects

	Lamaze	Non-Lamaze	t
Mean	25.75	25.39	1.0
S.D.	3.67	4.52	

In assessing the comparability of the groups according to parity, it was decided to use only two classifications, the first child and later children. It was reasoned that the important difference was whether or not the women had experienced childbirth not how many times. Thus, women who had one, two or three children were grouped as having later children. This reasoning is based on the medical practice of classifying women as primapara or multipara. It was found that the groups did not significantly differ on this factor. The experimental group contained 17 primiparas and 11 multiparas, while the control group contained 13

primaparas and 15 multiparas. These data are presented in Table 2.

Table 2

Parity of Subjects

	Lamaze	Non-Lamaze
First child	17	11
Later child	13	15

By means of a χ^2 test it was determined that there was no significant difference between the experimental and control groups ($\chi^2 = 1.15$) on this variable.

On the factor of education the experimental group had significantly higher levels of education than the control group. The experimental group contained eight subjects with a high school or less education while the control group contained 20 such subjects. Some college training (one to three years) had been experienced by 12 experimental subjects, while only six of the control group had that much education. This difference was also seen in the category of college graduate with eight of the experimental subjects reporting four years of college and only two of the control subjects. These differences were found to be statistically significant as tested by χ^2 ($\chi^2 = 10.74$, $p < .01$). In Table 3 these data are shown.

Table 3

Education of Subjects

	Lamaze	Non-Lamaze
Less than High School	8	20
1-3 yrs. High School	12	6
College Graduate	8	2

Instruments

The instruments used in this study consisted of the Parent Attitude Inventory and a Semantic Differential constructed for this study.

Parent Attitude Inventory

The Parent Attitude Inventory was developed by Pittfield and Oppenheim (1964) according to the Likert method of attitude-scale construction. It was designed to be a paper-and-pencil inventory and to be self-administering. The instrument was standardized on a nationally representative sample of mothers and has a reported reliability coefficient of .79 (Pittfield and Oppenheim, 1964).

The Inventory consisted of 52 items two of which are not scored. Possible responses were on a five-point scale ranging from strongly disagree, disagree, uncertain to agree and strongly agree. Ten attitude areas were covered with

five items for each area. These five items were selected from a much larger number of statements. The selection of five statements from the item pool was made according to the Likert procedure which dictates two criteria: (1) that the scale items chosen should correlate highly with the score derived from the total item pool and (2) that the items differentiate between different kinds of respondents. Thus, the five items selected on each scale should discriminate almost as well as the original 20 or 25 items. The ten attitude scales are: (1) Overprotective (Dominant); (2) Overprotective (Submissive); (3) Acceptance; (4) Rejection; (5) Objectivity; (6) Democracy; (7) Autocracy; (8) Infant Training; (9) Habits and Manners; and (10) Sex Training. Scales 1 through 5 form an Acceptance/Rejection Factor and scales 6 through 10, a Strictness Factor. See Appendix C for the items reflecting these scales. Previous work on the instrument shows that it does discriminate between mothers of different ages, social backgrounds, and educational levels.

Semantic Differential

As a second measure of attitude, a semantic differential was used. The semantic differential is not a standardized instrument; however, the technique is standardized. Through research on many subjects using factor analytic techniques, Osgood, Suci and Tannenbaum (1957) have

identified and quantified various dimensions of meaning in human judgment. In their studies, an Evaluative Factor regularly appeared first and accounted for one-half to three-fourths of extractable variance. This Evaluative Factor refers to the judgment of a concept's goodness or badness, or how highly valued the concept is. The second dimension of semantic meaning in the semantic differential is the Potency Factor. This Factor has to do with power and things associated with it, size, weight, toughness, etc. In studies of semantic meaning, the Potency Factor accounted for approximately one-half as much of the variance as the Evaluative Factor. A third factor of Activity has been identified and quantified but was not used in this study. According to Osgood, Suci and Tannenbaum (1957) the semantic differential is most applicable in measuring attitude when scales are restricted to those reflecting the evaluative factor. Test-retest coefficients of the semantic differential range from .87 to .93 with a mean $\underline{r}$ of .91 (Osgood, et al., 1957).

Concurrent validity was demonstrated by correlating semantic differential scales with Thurstone Attitude Scales. The correlations between the semantic differential scores and the corresponding Thurstone scores were all significant at the .01 level (Osgood, et al., 1957). For the concept Church, correlations ranged from .74 to .83, for Capital Punishment from .81 to .91 and for the Negro from .82 to

.87. The correlation of the evaluative scales of the semantic differential with Guttman type scales yielded a rank-order correlation of .78, significant at the .01 level (Osgood, et al., 1957).

The concepts used on the Semantic Differential in this study were chosen by the experimenter on the basis of their logical relationship to maternal attitudes. Three of these concepts were selected for their relationships to the birth process: Childbirth, Doctor and Hospital. Seven concepts were selected for their relationship to family life. These were: Baby, Son, Daughter, Mother, Husband, Family and Childcare.

These concepts were judged on 10 bipolar scales consisting of adjective-pairs with opposite meaning. In selecting adjective-pairs for the scales, the Thesaurus of Adjective-Pairs presented by Osgood, Suci and Tannenbaum, (1957) was used. In this Thesaurus adjective-pairs were arranged by factor-analytic loadings on the dimensions of Evaluative, Potency and Activity as well as several minor factors. Six of the adjective scales were selected for high loadings on the Evaluative Factor and four were selected for their loadings on the Potency Factor. The Evaluative and Potency Factors were analyzed independently. The adjective-pair scales used in the Semantic Differential were:

Evaluative Factor

good	bad
kind	cruel
successful	unsuccessful
pleasurable	painful
beautiful	ugly
positive	negative

Potency Factor

severe	lenient
heavy	light
hard	soft
strong	weak

Procedure

Each experimental subject was contacted by telephone and the study was explained in terms of time required and procedure. It was explained that the study consisted of completing two questionnaires at the present time, a process taking approximately one-half an hour, and a second interview when her baby was about six weeks old. The subject was asked if she was interested in participating: if the answer was "yes," an appointment was made to come to her home at a time convenient to the subject. Some of the control subjects were contacted in the office of an obstetrician. The same explanation was given and the same opportunity to agree or

refuse to participate. This interview was conducted in a private office in the suite.

The administration of all the instruments was accomplished by the same person, the investigater. The subject was first asked to complete the Personal Data sheet (See Appendix H). It was explained that the questionnaires would have no names on them, only numbers and that the personal data would be used to analyze the data statistically. The subject was then given the Parent Attitude Inventory. The directions consisted of reading aloud to the subject the directions which were printed on the test. She was then given a pencil and allowed to proceed. After completion of this form, the Semantic Differential was given to the subject. The page of directions was read aloud to the subject and she was instructed to proceed. This same procedure was followed both at home and in the office.

The Personal Data sheet indicated the date of the expected birth of the child. Each subject was contacted again by telephone approximately six weeks after this date, and an appointment made to come to the subject's house for the second interview. The same procedure for administering the instruments was followed with the posttest as with the pretest. All posttests were administered in the homes of the subjects.

The responses to the items of the Parent Attitude Inventory were recorded directly on the test booklet. The

subject had a choice of five responses: strongly disagree, disagree, uncertain, agree and strongly agree. The subject was asked to read the statement, make a judgment and place a checkmark in the column which most closely expressed her judgment.

The Semantic Differential consisted of a booklet with 11 pages. Page one contained the instructions, pages 2 through 11 each set forth a different concept at the top of the page and 10 bipolar adjectives below the name of the concept. Each pair of bipolar adjectives had a space between them, as follows:

good:___:___:___:___:___:___:___:___:bad

The subjects were instructed to check the space closest to the adjective if she considered the concept very closely related to one end or the other; to check the second space from the adjective if she considered the concept quite closely related to one end or the other; and to check the third space from the end if she considered the concept only slightly related to one end or the other. The center space was to be checked if the concept was judged to be equally related to one end or the other, or if the scale was judged to be irrelevant to the concept.

The Parent Attitude Inventory consisted of 52 items. There were 10 scales with 5 items each in addition to the first two items which were not scored. The responses were coded one to five, with strongly disagree coded one, and

strongly agree coded five. Items 6, 14 and 49 were scored in reverse. Thus the range of scores for each subject was a possible 5 to 25 for each scale. The total score was obtained by summing the scale scores for each subject in that group (Appendix F).

The data from these instruments consisted of 10 scores on the Parent Attitude Inventory, 10 scores for the Potency Factor of the Semantic Differential and 10 scores for the Evaluative Factor of the Semantic Differential. Thus there was a total of 30 dependent variable scores.

Analysis of Data

These data were analyzed by the computer at the University of North Carolina at Chapel Hill, North Carolina, using the catalogued procedure from U.C.L.A. Bio-Medical Department (BMD). The pretest data were analyzed using the BMD08V program, and analysis of covariance with multiple covariates for the posttest data was performed with the BMDX69 program.

In the first analysis the pretest scores were compared for the two groups on each of the 30 dependent variables. This was accomplished by 30 separate analyses of variance. The second analysis consisted of analysis of covariance with both pretest scores and education serving as covariates. This analysis was performed separately for each of the 30 dependent variables. The alpha level selected for

all tests of significance was set at .05, however, differences approaching the .10 level were noted and are discussed.

CHAPTER IV

RESULTS

The results of the study will be presented in two sections. The first section will present the results of analysis of the pretest scores, and in the second section the results of the analysis of the posttest scores will be presented. In this presentation, all differences in the groups will be reported along with their significance level of .01, .05 or .10. This procedure is within the framework of Cohen (1965, 1969) in which he notes that significance changes from study to study. That is, significance at the .05 level can change according to whether the test used was one-tailed or two-tailed (in a _t_ test) and with the number of subjects in the sample. In Cohen's conception, the experimenter should consider four parameters of statistical inference, rather than the single one of alpha level. These four parameters are: power, significance criterion, sample size and effect size. According to Cohen (1965) these factors are so related that any one of them is a function of the other three, which means that when any three of them are fixed the fourth is completely determined. Thus, Cohen argues that, to better understand the inference from data, all of these parameters must be understood. This

understanding includes seeing significance level of .05 as a convention and not a magic number below which a difference is significant and above which it is insignificant; rather, one must also consider the effect size, the sample size and the beta risk of failing to detect a difference which may actually exist.

Cohen argues that while experimenters are rigorous about Type I errors (the risk of erroneously rejecting a null hypothesis) they are ignorant of Type II errors (risk of failing to reject a false hypothesis). In other words, experimenters are quite careful to set a probability of five per cent that they may identify a difference which does not actually exist, but are usually ignorant of the power of their test to detect differences which actually exist in the sample. Thus, according to Cohen, the error of many behavioral scientists is not in making false claims of differences which exist, but the failure to detect actual differences because of low power of their test.

A parameter seldom considered is effect size (ES). This is an estimate of the difference between population means. Cohen defines a small difference as .25 standard deviation, a medium difference as .5 standard deviation and a large difference as 1.0 standard deviation. He suggests that these differences can be estimated by correlation coefficients. The correlation coefficients for these differences, respectively, are .20, .40 and .60. Thus, Cohen

argues that the researcher should determine which order of magnitude he wants to detect between populations and set this level. As the size of the sample increases, the power of the test to detect an effect size increases at a given alpha level. Similarly, the detection of a smaller effect is possible with the same power and alpha level when sample size increases.

Cohen suggests the convention that alpha be set at .05 power at .80 and ES at .40, or a medium effect size. He has constructed tables to determine the number of subjects needed for different types of analyses when these factors are set. The rationale for setting power at .80 is the recognition that a Type I error is more serious than a Type II error. Thus, with power at .80 the beta risk is .20 or four times as great as the alpha risk of .05.

Since the possibility of a significant F is variable with increase or decrease of sample size, Cohen further suggests that differences less than .05 be reported. If the four parameters of sample size, effect size, power and alpha level are reported the reader can evaluate the importance of these differences. Those above the .05 level could be suggestive of further research if greater power were used in a replication. Following this line of reasoning, differences of 10 per cent significance will be reported, not to be taken as fact, but perhaps suggestive of further research.

In the present study, with two groups of 28 subjects the test has a power of .84 to detect a medium effect size of .40 (equal to .5 standard deviation) at the .05 level. If the alpha level is dropped to .01 the test has 63 per cent power to detect an effect size of .40. When the alpha level is raised to .10 an effect size of .40 can be detected with power of .91.

Pretest Results

The pretest data were analyzed by analysis of variance rather than *t* tests. This analysis yields an *F* ratio which is equal to t^2 when only two groups are entered into the analysis. The results of the comparison of the initial differences between the two groups for the Potency Factor of the Semantic Differential revealed that the mean score on eight concepts was higher for the non-Lamaze group than for the Lamaze group. These concepts were Hospital, Son, Mother, Husband, Family, Doctor, Childcare and Childbirth. The Lamaze group scored higher on the concepts of Daughter and Baby. The differences on the concepts Doctor ($F = 5.20$) and Childbirth ($F = 4.58$) were both significant at the .05 level. The non-Lamaze group rated Husband ($F = 3.61$) a more potent concept, significant at the .10 level, and the Lamaze group rated the concept Daughter ($F = 3.19$) higher at the .10 level of confidence. On the concepts Hospital, Son and Baby, the *F* ratio equalled less than one. These data are presented in Table 4.

Table 4

Means and F Ratios on Pretests, Potency Factor of Semantic Differential

Concept	Lamaze Group N = 28	Non-Lamaze Group N = 28	F
Hospital	17.03	17.61	< 1.00
Son	17.29	17.79	< 1.00
Mother	15.11	16.29	1.43
Husband	16.50	18.36	3.61
Family	16.29	17.04	1.00
Doctor	17.67	19.54	5.20*
Daughter	15.54	14.00	3.19
Childcare	16.68	17.50	1.00
Childbirth	17.89	19.60	4.58*
Baby	13.18	12.14	< 1.00

* p .05

A comparison of the means on the pretest of the two groups on the Evaluative Factor revealed that the non-Lamaze group rated the concepts Hospital, Son, Mother, Husband, Family, Doctor, Daughter and Baby higher while the Lamaze group rated Childcare and Childbirth higher. Only one difference, Son ($F = 4.78$) was significant at the .05 level. Both Hospital ($F = 3.36$) and Childbirth ($F = 3.33$) were significant at the .10 level. On four concepts, Mother, Husband, Daughter and Baby, the F ratio equalled less than one. In Table 5 these data are presented.

The results of the comparison of pretest scores between the groups on the Parent Attitude Inventory shown in Table 6 revealed that the non-Lamaze group scored higher on Overprotective (Dominant), Overprotective (Submissive), Acceptance, Objectivity, Democracy, Habits and Manners (strictness concerning) and Sex Training (strictness concerning) while the Lamaze group scored higher on Rejection, Autocracy and Infant Training (strictness concerning). Five of these differences, Objectivity, Democracy, Autocracy, Infant Training and Habits and Manners showed an F ratio of less than one. Only one difference, Sex Training ($F = 20.19$) was significant. This difference exceeded the .001 level of confidence.

Posttest Results

The results of the analysis of covariance on the dependent variables of the Potency Factor of the Semantic

Table 5

Means and F Ratios on Pretests, Evaluative Factor of Semantic Differential

Concept	Lamaze Group N = 28	Non-Lamaze Group N = 28	F
Hospital	30.54	32.82	3.36
Son	35.46	38.46	4.78*
Mother	36.29	37.29	< 1.00
Husband	37.54	38.00	< 1.00
Family	37.64	39.03	1.42
Doctor	35.14	36.86	2.41
Daughter	37.71	38.68	< 1.00
Childcare	36.18	37.79	1.13
Childbirth	34.29	31.46	3.33
Baby	38.18	39.39	< 1.00

* p .05

Table 6

Means and F Ratios on Pretests of Parent Attitude Inventory

Scale	Lamaze Group N = 28	Non-Lamaze Group N = 28	F
Acceptance/Rejection Factor			
Overprotective (Dom.)	12.12	12.89	1.35
Overprotective (Sub.)	12.75	13.43	1.05
Acceptance	18.36	18.96	1.75
Rejection	10.89	10.18	2.52
Objectivity	19.89	20.14	<1.00
Strictness Factor			
Democracy	17.68	18.04	<1.00
Autocracy	15.04	14.89	<1.00
Infant Training	12.04	11.71	<1.00
Habits and Manners	14.54	14.82	<1.00
Sex Training	10.04	13.00	20.19***

*** p .001

Differential revealed that the non-Lamaze group judged eight concepts more potent than the Lamaze group. These concepts were: Hospital, Mother, Husband, Doctor, Daughter, Childcare, Childbirth and Baby. The Lamaze group judged the concepts Son and Family higher on the Potency Factor. Three of these differences were significant at the .05 level, these were: Doctor ($\underline{F}$ = 4.42), Daughter ($\underline{F}$ = 4.67) and Childbirth ($\underline{F}$ = 7.30). The difference on the concept Hospital ($\underline{F}$ = 2.81) was significant at the .10 level. The differences expressed by the $\underline{F}$ ratio on the concepts of Son, Mother, Family, and Baby were less than one. In Table 7 the adjusted means for these concepts and the $\underline{F}$ ratios are presented.

The adjusted means and $\underline{F}$ ratios for the 10 dependent variables of the Evaluative Factor of the Semantic Differential are presented in Table 8. Inspection of this table revealed that on eight of the concepts the non-Lamaze group had a higher mean score. These concepts were: Hospital, Mother, Husband, Family, Doctor, Daughter, Childcare and Baby. The Lamaze group had a higher mean score on the concepts Son and Childbirth. None of these differences was significant at the .05 level, however the difference on Childcare ($\underline{F}$ = 3.03) was significant at the .10 level.

The mean scores of the two groups on the Parent Attitude Inventory adjusted for the pretest and educational attainment of the subjects and the $\underline{F}$ ratios of the analyses of covariance are presented in Table 9. These data revealed

Table 7

Adjusted Means and F Ratios on Posttests, Potency Factor of Semantic Differential

Concept	Lamaze Group N = 28	Non-Lamaze Group N = 28	F
Hospital	16.05	17.33	2.81
Son	16.57	16.18	< 1.00
Mother	15.21	15.36	< 1.00
Husband	16.64	17.61	1.72
Family	16.57	16.25	< 1.00
Doctor	16.98	18.66	4.42*
Daughter	13.37	15.24	4.67*
Childcare	15.89	16.83	2.37
Childbirth	17.05	20.41	7.30**
Baby	13.19	13.99	< 1.00

** $p < .01$
* $p < .05$

Table 8

Adjusted Means and F Ratios on Posttests, Evaluative Factor of Semantic Differential

Concept	Lamaze Group N = 28	Non-Lamaze Group N = 28	F
Hospital	33.75	34.39	< 1.00
Son	37.78	37.40	< 1.00
Mother	37.27	37.90	< 1.00
Husband	37.49	38.48	< 1.00
Family	38.39	39.75	1.58
Doctor	36.49	37.12	< 1.00
Daughter	38.31	39.26	< 1.00
Childcare	36.92	38.90	3.03
Childbirth	35.42	33.29	2.73
Baby	38.34	39.84	1.82

Table 9

Adjusted Means and F Ratios on Posttests of Parent Attitude Inventory

Scale	Lamaze Group N = 28	Non-Lamaze Group N = 28	F
Acceptance/Rejection Factor			
Overprotective (Dom.)	13.08	12.60	< 1.00
Overprotective (Sub.)	14.56	13.76	1.00
Acceptance	18.86	18.75	< 1.00
Rejection	10.03	10.14	< 1.00
Objectivity	20.38	19.98	< 1.00
Strictness Factor			
Democracy	17.97	17.75	< 1.00
Autocracy	14.49	14.26	< 1.00
Infant Training	10.37	10.74	< 1.00
Habits and Manners	14.70	13.55	5.29*
Sex Training	10.84	11.12	< 1.00

* p .05

that on eight of the scales the *F* ratio was less than one. These scales were Overprotective (Dominant), Acceptance, Rejection, Objectivity, Democracy, Autocracy, Infant Training and Sex Training. Overprotective (Submissive) attained an *F* ratio of 1.00 with the Lamaze group showing a higher mean score. The scale Habits and Manners ($F = 5.29$) showed a difference significant at the .05 level of confidence with the Lamaze group higher on this concept.

CHAPTER V

DISCUSSION

The discussion of this study will cover two aspects. First the pretest results will be considered, then the posttest results. Following the discussion of the study some methodological considerations will be presented. Finally, the present study will be compared to a similar study conducted with different subjects. The pretest was given to determine pre-experimental equivalency between the groups, and these data have no generalizability. The intention, then, is descriptive rather than inferential. There are also cautions about inference from the posttest data due to the self-selection of the subjects.

Before considering the results a look at the structure of the semantic differential may aid understanding. In considering the semantic differential, it should be kept in mind that this is not a standardized instrument, but a standardized technique. The object is not to conclude that one group has more of a certain attribute than another, but to assess the meaning to those groups of various concepts. The problem was to determine if the meaning that the two groups gave to key concepts differed. Two dimensions of meaning were assessed, Potency and Evaluative. These names

are not necessarily meant to be descriptive of the meanings ascribed to a concept by subjects, rather they are used to denote a cluster or dimension of meaning found by research. That is, the names were assigned after research had shown that semantic meaning generally formed three major dimensions. According to the adjectives clustered at these dimensions, the names Evaluative, Potency and Activity were assigned post hoc. (Osgood, Suci and Tannenbaum, 1957)

In this study, only the Evaluative and Potency dimensions were assessed. In order fully to assess what was measured, it is necessary to look at the adjectives used to define these dimensions. This, of course, can change with each study according to the selection of bipolar adjectives. In the present study the Potency Factor was defined by the continua, lenient-severe, light-heavy, soft-hard, weak-strong. A higher score meant that a group assessed a concept as more severe, heavy, hard, strong, while a lower score meant less of the above, or more lenient, light, soft, weak. Thus, this factor expresses power, or strength with perhaps overtones of threat of difficulty. The exact meaning of the dimension may vary with the concept being judged. Generally in this study, the Potency Factor was interpreted as an index of fear or anxiety or negativeness associated with a concept.

The Evaluative dimension was defined by the continua, bad-good, cruel-kind, unsuccessful-successful,

painful-pleasurable, ugly-beautiful, negative-positive. Thus a high score meant a concept was perceived as more good, kind, successful, pleasurable, beautiful, positive, while a lower score meant a concept was judged as being more bad, cruel, unsuccessful, painful, ugly, negative. This dimension is most clearly understood as an assessment of the goodness, desirability or positive aspects of a concept.

Pretest

It has been widely held that there exist initial differences in women who choose the Lamaze method of childbirth education and those who do not. Previous studies, (Thoms and Karlovsky, 1954; Davis and Morrone, 1962) have shown differences in educational level between women choosing childbirth education and those not choosing childbirth education. The presumption is that educational differences, in turn, reflect a difference on many variables of maternal attitudes and practices. Previous research has shown correlations between educational and socio-economic levels and such variables as democratic childrearing attitudes, strictness in childrearing and use of punishment (Becker, Peterson, Luria, Shoemaker and Hellmer, 1962).

The present study confirmed a difference in educational level of the women who chose Lamaze training and women who did not. But how different were these women in their assessment of the power and value of concepts related

to family life and to childbirth? How different were they in their childrearing attitudes?

One of the major tenets of the Lamaze technique is that in the process of childbirth control rests with the woman not with the doctor; whereas in the general approach to childbirth the control (and power) rests with the doctor (Rosenberg, 1943). It is he who "delivers" the child not the woman who gives birth. Most women approaching training for childbirth or refusing to select training are already aware of this difference.

In the present study women not choosing Lamaze training judged the meaning of Doctor ($\underline{F} = 5.20$, $\underline{p} < .05$) and Childbirth ($\underline{F} = 4.58$, $\underline{p} < .05$) to be more severe, heavy, hard, strong than the group choosing childbirth training. The concepts of Doctor and Childbirth are clearly related to the birth process.

As previously mentioned, a feature of Lamaze training is the locus of control in childbirth. It may be that a higher rating by the non-Lamaze group on power of Doctor reflects this group's placing of control in an external source while for the Lamaze group control is more internal.

The higher scores by the non-Lamaze group on power of Doctor and trend for Husband ($\underline{F} = 3.61$, $\underline{p} < .10$) may alternatively be interpreted as greater dependency on male figures for these women. A careful reading of Osgood, Suci and Tannenbaum (1957) indicates that the Potency Factor may

have overtones of malevolence. Dependency, of course, is a two-edged sword. One may be cared for by someone else, but in turn something must be given up. The picture of these women who rate Doctor and Husband as more severe, heavy, hard, strong is perhaps one of women controlled by their men, less independent and less given to exploring new ideas and controlling their own destinies.

In discussing Lamaze childbirth training, it is interesting to consider the concepts Doctor and Husband together for in the Lamaze Technique the husband's role is to be emotionally supportive. It is he who remains with the woman in labor and delivery while the doctor usually arrives only for the delivery. This kind of support is often expected from the doctor in untrained women. There has been speculation (Rosenberg, 1944; Vellay, 1960) that women not having their husbands present at this time resent being separated from him. We are in the midst of changing the cultural practice concerning the role of the husband in childbirth (Karmel, 1959). There is controversey on both sides. On one side are physicians, psychologists and husbands who decry the husband being present for the birth of his child. On the other side are equally vociferous professional and lay persons who insist on the right and importance of the husband to be present.

The non-Lamaze group's higher rating on the Potency Factor of Childbirth may reflect a greater anxiety and/or

fear toward the forthcoming event. Indeed, the fact that the group not choosing childbirth education ascribed to childbirth a meaning more severe, heavy, hard, strong may in itself cause anxiety in these women. Clinical reports of women at parturition (Van Auken, 1971) noted that women trained for childbirth were less noisy, more cooperative and generally had shorter labors. The opposite of these behaviors could represent fear and/or anxiety. One might make the assertion that anxious behavior in childbirth is in part created by the meaning ascribed to the event. Alternatively, a higher rating on the Potency of Childbirth by the group not choosing childbirth training may reflect a greater awe for the event, but not necessarily one provoking anxiety. It could be argued that dependency increases security and lessens anxiety. As Mead and Newton (1967) noted, the meaning of childbirth is dictated by the culture. Whether these culturally ascribed meanings are amenable to change by educational techniques or are so inculcated by the culture as to be inaccessible to usual methods of intervention is a question for further research. As is the meaning of childbirth itself in a culture.

The Evaluative Factor denotes a different dimension of meaning on a semantic differential. The non-Lamaze group judged the meaning of Son ($\underline{F} = 4.78$, $\underline{p} < .05$) significantly more good, kind, successful, pleasurable, beautiful, positive. This rating is consistent with a greater dependency on male

figures and perhaps reflects a higher value placed on males in general. On the other hand, the law of parsimony may be invoked here. One might hypothesize that women who did not have sons would value them more highly than those who did, or that women who desired sons would value them more highly. A check of the statistics for the sample indicated that the non-Lamaze group did have fewer sons (7) than the Lamaze group (9) and they had many more (13) daughters than the Lamaze group (2). Thus, the higher evaluation of Son by the non-Lamaze group could represent a greater desire for sons, because they had fewer sons.

There were no other differences between the groups on the Evaluative Factor significant at the .05 level, however several differences were apparent at the 10 per cent level. These differences generally support the interpretation given above. The non-Lamaze group valued Hospital ($F = 3.36$, $p < .10$) and Doctor ($F = 2.41$) higher, while the Lamaze group valued Childbirth ($F = 3.33$, $p < .10$) higher.

We may speculate on this pattern that generally the Lamaze group felt childbirth was important, but were not impressed with either the event, or the accouterments surrounding it (Doctor, Hospital), while the non-Lamaze group felt it was a less important (less positive) event, and were impressed with the power of it, its facilitator (Doctor) and setting (Hospital).

We note that only strictness concerning Sex Training revealed a significant difference between the two groups on the Parent Attitude Inventory. No other difference achieved the magnitude of this scale. Although the difference is great, ($\underline{F} = 20.19$, $\underline{p} < .001$) the fact that there are no similar results on the other four scales of the Strictness Factor may weaken its importance, for it may represent a statistical artifact rather than a real difference in groups. It is logical to assume that the scales "hang together" i.e., strictness in Sex Training is usually accompanied by strictness in Infant Training and/or Habits and Manners.

On the other hand, a more strict attitude toward sex training is consistent with the non-Lamaze group's higher assessment of power and value for male figures and potency of childbirth. Very few writers stress the sexuality of childbirth, yet it is the ultimate expression of female sexuality and childbirth education can be thought of as sex education. A basic rationale of childbirth education is that education in sexual (reproductive) functioning lessens the fear and breaks the fear-tension-pain syndrome (Read, 1953). Therefore, it is reasonable to assume that those women with more relaxed attitudes toward sex would be more favorably inclined to the classes while those with more rigid attitudes might avoid them.

If the score on Sex Training is interpreted as indicative of receptivity toward childbirth education, the lack of

difference in Infant Training and Habits and Manners becomes consistent with the results on the Semantic Differential. That is, the differences in these two groups were specific to the situation of childbirth and that there was no difference in the groups' attitudes of more general facets of family life and childrearing practices.

Posttest

The major question of the study dealt with change in attitudes as affected by treatment not with the initial attitudes of subjects. The change assessed was over a period of three months in which all subjects gave birth to a baby. The question was whether the Lamaze group changed in a way different from the group unexposed to Lamaze training. The first hypothesis stated in the alternative was that there would be differences in maternal attitudes as measured by the Parent Attitude Inventory between women trained for childbirth by Lamaze techniques and women not so trained.

Tanzer (1968) noted that after a prepared childbirth women expressed more positive feelings towards their husbands, raised self-esteem and more positive first contacts with their babies than a similar group of control subjects.

Of the 10 scales of the Parent Attitude Inventory, only one scale, Habits and Manners, showed a significant difference between the groups in posttest scores. This indicated that the Lamaze group exhibited a more strict

attitude concerning habits and manners than the non-Lamaze group. This difference in posttest scores, however, was not due to the Lamaze group becoming more strict, but to the non-Lamaze group becoming less strict in their attitudes concerning habits and manners. The unadjusted means from the scale Habits and Manners indicate that the mean score for the Lamaze group was nearly the same (14.54 - 14.50) from pretest to posttest, indicating a stability on this measure for this group. The control group, however, decreased from a mean of 14.82 to 13.75.

In Table 10 pretest and unadjusted posttest means for the Parent Attitude Inventory are presented. Since the difference in unadjusted means for the Lamaze group from pretest to posttest was only .04 and the difference in unadjusted means for the non-Lamaze group was 1.09 it seems reasonable that the statistically significant difference ($p < .05$) was primarily due to change in the non-Lamaze group. Analysis of covariance with pretest scores on the same test is comparable to change scores being a slightly more sophisticated manipulation of data. To what can be attribute such a difference? In the absence of a corroborating pattern in other strictness scales, we can only speculate. A possible explanation of this difference is that the usual pattern is for mothers to be less strict about habits and manners after the birth of the child and the effect of

Table 10

Pretest and Unadjusted Posttest Means of Parent Attitude Inventory

Concept	Lamaze Group N = 28		Non-Lamaze Group N = 28	
	Pretest	Posttest	Pretest	Posttest
Acceptance/Rejection Factor				
Overprotective (Dominant)	12.12	12.96	12.89	12.71
Overprotective (Submissive	12.75	14.29	13.43	14.04
Acceptance	18.36	18.57	18.96	19.04
Rejection	10.89	10.21	10.18	9.96
Objectivity	19.89	20.29	20.14	20.07
Strictness Factor				
Democracy	17.68	17.92	18.04	17.78
Autocracy	15.04	14.67	14.89	14.07
Infant Training	12.04	10.29	11.71	10.82
Habits and Manners	14.54	14.50	14.82	13.75
Sex Training	10.04	9.79	13.00	12.18

training for childbirth is to maintain an equal attitude of strictness from prepartum to postpartum.

A second possible explanation is that the non-Lamaze group had fewer first births (four). Although the difference between the two groups in first and later births was not statistically significant, with this size sample four cases could conceivably affect another rating. Thus, the difference could be due to the particular sample. It is also possible that it is a chance difference. Since no other scale for the Strictness Factor revealed a significant difference, it was concluded that there was no difference between the groups for this Factor.

There was no evidence of any differences between the groups for the Acceptance/Rejection Factor as the F ratios for all five scales were one or less. Thus, the evidence does not support accepting hypothesis one.

The second hypothesis of this study, stated in the alternative, was that there would be differences in maternal attitude as measured by ten concepts on a semantic differential between women trained for childbirth by Lamaze techniques and women not so trained.

On the posttests for the Semantic Differential, it can be seen that all of the significant differences are on the Potency Factor. Further, in each of these, the non-Lamaze group was higher. Two of the three significant differences were Doctor and Childbirth. These are clearly

related to the birth process. Thus, one can see that for women who were not trained for childbirth, the meaning of both Doctor and Childbirth was more severe, heavy, hard, strong, than for those women with childbirth training. A look at the pretest means on Childbirth shows that initially the non-Lamaze group was higher on this concept ($\underline{F} = 4.58$, $p < .05$). On the posttest, this difference widens ($\underline{F} = 7.30$, $p < .01$) even after the scores were adjusted for initial differences. The initial difference between the groups was 1.81, significant at the .05 level. The unadjusted means on the posttest showed a difference of 3.68. When the means were adjusted to compensate for the initial difference the difference remaining was 2.36. This difference was significant at the .01 level. In Table 11 the pretest and unadjusted posttest means for the Potency Factor are presented. Inspection of this table indicates that the two groups changed in opposite directions. That is, the mean for the Lamaze group decreased, while the mean for the non-Lamaze group increased on the rating of Potency of Childbirth. Thus, after experiencing birth, with different methods of preparation the trained group rated Childbirth less potent, while the untrained group increased their judgment of the concept as severe, heavy, hard, strong. This result confirms previous clinical reports (Read, 1953, Miller, 1961, Van Auken, 1971) that trained women find childbirth more satisfying and less difficult.

Table 11

Pretest and Unadjusted Posttest Means, Potency Factor of Semantic Differential

Concept	Lamaze Group N = 28		Non-Lamaze Group N = 28	
	Pretest	Posttest	Pretest	Posttest
Hospital	17.03	15.79	17.61	17.60
Son	17.29	16.32	17.79	16.43
Mother	15.11	15.14	16.29	15.43
Husband	16.50	16.36	18.36	17.89
Family	16.29	16.25	17.04	16.57
Doctor	17.67	16.61	19.54	19.04
Daughter	15.54	13.89	14.00	14.71
Childcare	16.68	15.75	17.50	16.96
Childbirth	17.89	16.89	19.60	20.57
Baby	13.18	13.53	12.14	13.64

It seems that the major difference attributable to Lamaze training is the perception of childbirth itself. The technique designed to lessen fear and anxiety about childbirth seems to do just that, while those women not exposed to childbirth training but experiencing the event raise their perception of the event as difficult or fearful.

The educational level of the subjects accounted for a non-significant amount of the variance ($F = 1.19$) on this concept. Therefore the criticism of the method that it is only useful for the higher educated women seems questionable, as Van Auken (1971) also found.

In this life setting, the concept Doctor is closely allied to the concept Childbirth. The difference between the groups for the concept Doctor on the Potency Factor was found to be significant, with the non-Lamaze group again higher ($F = 4.42$, $p < .05$). The comparison of pretest and unadjusted posttest means showed that both groups decreased in their judgment of the potency of Doctor. The non-Lamaze group decreased only .50, while the Lamaze group decreased 1.06 points. It was also noted that the non-Lamaze group rated Hospital higher on the Potency Factor ($p < .10$). Although the 10 per cent level gives little solid ground for argument, this rating logically supports the previously discussed ratings for Doctor and Childbirth.

In essence, then, both groups showed less negative meaning for Doctor after the birth than before, while

feelings of fear or difficulty for childbirth decrease for those women prepared for childbirth and increase for those women unprepared.

A third significant difference was seen on the Potency Factor, that of Daughter. The concept is possibly an ambiguous one in this study. Rubin (1967a, 1967b) and Jessner, Weigart, and Foy (1970) both noted that identification between a pregnant woman, her own mother and the fetus is a dynamic psychological condition at this time. Thus, it is uncertain whether the women had in mind themselves as a daughter, a daughter they already had, or a daughter they desired or did not desire. In actuality, the rating probably represented varying combinations of these elements. Nevertheless, there was a significant difference between the groups on the concept Daughter. The non-Lamaze group rated Daughter more severe, heavy, hard, strong. On the pretest, the Lamaze group was higher on this concept. This initial difference was removed in the posttest results. It is possible that this result is one of the five in 100 expected by chance. In the light of the ambiguity of the concept it should be left to further research to explicate.

On the Evaluative Factor of the Semantic Differential there was little evidence to indicate any difference between the groups. The Lamaze group evaluated Childbirth more positively initially ($p < .10$). With this difference removed, a posttest difference remained which was significant at the

.10 level (F = 2.73). The unadjusted means indicate that the change on this concept for the Lamaze group was the largest amount of change of all concepts, with an increase in mean of 2.04. The pretest and unadjusted posttest means for the Evaluative Factor are shown in Table 12. The non-Lamaze group, however, also increased their evaluation of Childbirth as good, kind, successful, positive, beautiful and pleasurable. The increase of this group, however, was only half as much as the Lamaze group, (1.00). These changes were not significant, because the question answered by the covariance procedure was not if one or the other group changed, but if there was a significant difference in the amount of change between the two groups. In this case, both groups changed, but in the same direction.

Therefore, the acceptance of hypothesis two must be qualified. The hypothesis was accepted, that there are differences in maternal attitudes specific to the birth process as measured on the Potency dimension of the semantic differential. The hypothesis was rejected that there are differences in maternal attitudes more generally related to family life or specific to the birth process as measured on the Evaluative dimension of the semantic differential.

Methodological Considerations

The methodology of this study included controlling for the effect of previous attitudes (pretest) and educational

Table 12

Pretest and Unadjusted Posttest Means, Evaluative Factor of Semantic Differential

Concept	Lamaze Group N = 28		Non-Lamaze Group N = 28	
	Pretest	Posttest	Pretest	Posttest
Hospital	30.54	33.89	32.82	34.25
Son	35.46	37.11	38.46	38.07
Mother	36.29	37.25	37.29	37.93
Husband	37.54	37.29	38.00	38.68
Family	37.64	38.18	39.03	39.96
Doctor	35.14	36.64	36.86	36.96
Daughter	37.71	37.96	38.68	39.61
Childcare	36.18	36.46	37.79	39.36
Childbirth	34.29	36.25	31.46	32.46
Baby	38.18	38.32	39.39	39.86

level. Mention has previously been made of the role of educational level in attitudes. While the focus of this study was not to determine the effect of educational level on attitudes, some understanding of the role of this factor in attitudes can be gathered by examining the analyses of covariance. For the 30 analyses performed, educational level contributed significantly to the variance on only two variables. These were both found on the Evaluative Factor of Hospital and Doctor. This, of course, does not confound the reported results as the variance contributed by education was removed from the analysis.

On all of the scales of the Parent Attitude Inventory measuring the Acceptance-Rejection Factor, the contribution of education was less than one. On the Strictness Factor, education contributed more to the variance but none approached the .05 level of significance. The implication is that educational level does not significantly affect childrearing attitudes. The educational levels, however, were restricted in the sample. Subjects were generally high school graduates or better. The socio-economic level of all subjects was middle class ranging from lower middle to upper middle.

The pretest data, on the other hand contributed significantly to the variance on every variable both for the Parent Attitude Inventory and the Semantic Differential.

It must be noted that there were 30 variables and four of these were significant beyond the .05 level. According to the theory of probability, we would expect to obtain 1.5 of these by chance when 30 analyses are performed. It is possible that there were no real differences in the groups and these few differences were chance occurrences. If on the other hand, one accepts the differences found between the groups as actual differences, it can be concluded that the effect of Lamaze training is primarily to change the perception of the event of childbirth in women participating in the training and secondarily their perception of the doctor. Further, Lamaze training seems to affect neither childrearing attitudes nor perception of concepts related to family life. These generalizations should be accepted with the caution that the groups were self-selected and may not be representative of all women choosing and not choosing Lamaze training.

Comparison of Studies

While generalization is limited in studies with existing groups, comparisons to other studies on similar groups with similar restrictions are of interest in discerning possible patterns. A study similar to the present one was conducted by Tanzer (1967) in New York City. This study also used a quasi-experimental design. Subjects were takers of a Natural Childbirth course and non-takers. The study

was conducted with unequal groups: the experimental group contained 22 subjects and the control group 14. The statistical treatment was nonparametric, whereas the present study used parametric statistics. The present study had the advantage of a larger sample size and equal groups. The groups in both studies were chosen in a similar manner and the procedure was comparable in that contact was made by telephone after physicians secured willingness to participate. In both studies interviews were conducted in the homes of the women.

Both studies consisted of prepartum and postpartum interviews. The Tanzer study had two prepartum interviews and one postpartum, while the present study had one prepartum and one postpartum interview.

In the initial characteristics of the women, Tanzer found no difference in physiological or psychological types between takers of the course and non-takers. Similarly, the present study found no difference in attitudes toward child-rearing or family life concepts in women choosing Lamaze and those not choosing it. Tanzer found that attitude toward pregnancy changed for these women taking the course. Takers of the course improved their attitude toward pregnancy, while non-takers remained the same. The present study found initial differences in attitudes toward concepts specific to the birth process, especially childbirth, between women

choosing the class and those not choosing it. Tanzer found no initial differences in attitudes.

Tanzer focused on the birth process itself and the postpartal interview was closer to the birth than the present study. Tanzer reported more positive subjective experiences of birth, more positive emotions in delivery and some rapturous peak experiences (in the framework of Maslow) for takers of the Natural Childbirth course. She also reported that takers of the course experienced more positive first contacts with the baby, raised feelings of self-esteem, increased security and closer relations with their husbands. The present study was not designed to measure many of these factors, and in fact, many of the reported effects from Tanzer are reports of clinical impressions or verbatim accounts from selected women, not an experimentally tested hypothesis. The clinical impressions in the present study supported a more positive subjective experience of birth for women trained; however, some of these women reported less positive experiences than they expected, or even negative ones. It is easy to forget these women and report only those for whom the experience was rapturous.

In the case of husbands however, all women in the present study who had husbands present either in labor or delivery expressed gratitude that he had been able to be with her and many reported that this was the major benefit. This

was not reflected in differential rating of the concept Husband between the two groups.

The Evaluative Factor on the Semantic Differential is the instrument most comparable to Tanzer's study in terms of measuring the concepts which she reported as clinical data. The present study measured the evaluation, in terms of goodness and badness, of the concepts Husband, Mother, Baby, Family, Childcare, Son and Daughter as well as Childbirth, Doctor and Hospital. There was no difference on any of these measures for women exposed to childbirth training and those not exposed. Thus, the present study from empirical data does not support Tanzer's clinical claims.

If the trained women had a more positive first contact with the baby, one might expect this to be reflected in a higher evaluation of the concept Baby. It was noted that all subjects rated this concept very highly and failure to find a difference may reflect a low ceiling for the scale. A closer look at subjects from prepartum through birth and the postpartal period encompassing mother and child would perhaps explicate this relationship. Tanzer reported that takers expressed increased security and higher self-esteem. It might be expected that this would be reflected in the evaluation of Mother or Family but such was not the case.

The differences in results of the two studies can perhaps be explained on two grounds. The first is methodology. The measures were not the same and are perhaps not comparable.

Tanzer's report of security and self-esteem were objective measures but it may be that these measures are not comparable to the semantic differential. The statistical treatment was also different for the two studies. In addition, both studies were limited by sampling procedures. Thus, effects found may be limited to the samples in each case. The lack of concurrance suggests a replication with objective measures and random sampling.

The second possible explanation is that both studies accurately measured the effects of childbirth education classes but that there is a "washout" effect present. That is, Tanzer's postpartal measures were within one month of the birth and in the present study measures were taken further away from the event. It may be that these heightened experiences exist at birth for those women experiencing prepared childbirth but that they disappear over a period of time. One purpose of the present study was to determine if differences were persistent, if such existed.

Any or all of these explanations may be true. Child development research would benefit greatly from more careful research into the prenatal and neonatal periods.

CHAPTER VI

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

Summary

The problem investigated in this study was the relationship between prenatal education using psychophysical methods and maternal attitudes. Specifically, the question was, do courses designed to alter attitudes and behavior of women toward childbirth also alter their attitudes toward childrearing practices and family life concepts? It was hypothesized that:

1. There will be differences in maternal attitudes as measured by the Parent Attitude Inventory of women trained for childbirth by Lamaze techniques and women not so trained.

2. There will be differences in maternal attitudes as measured by ten concepts on a semantic differential of women trained for childbirth by Lamaze techniques and women not so trained.

The question was investigated by means of a pretest-posttest, experimental-control group design. The experimental group consisted of women enrolled in Lamaze training for childbirth and the control group consisted of a matched sample of women receiving no formal prenatal education. The

subjects were 56 pregnant women in Greensboro, North Carolina. Half of these (28) were enrolled in classes for childbirth education using the Lamaze Method, and half were a matched sample selected from the private practices of Greensboro physicians. The subjects were all from the middle socio-economic stratum, white, married, living with their husbands. The groups were matched on the variables of age and parity, but differed on educational level.

All subjects were contacted approximately six weeks before the birth of their children and a pretest administered. Each was contacted again approximately six weeks after the birth of her child and a posttest administered. Pretests were administered either in the homes of the subjects or in the office of an obstetrician and all posttests were administered in the homes of the subjects.

The measures of maternal attitudes were the Parent Attitude Inventory (PAI) developed by Oppenheim and Pittfield and a semantic differential constructed for the study. The PAI contained 10 scales and two composite factors. An Acceptance-Rejection Factor was measured by five scales consisting of: (1) Overprotective (Dominant), (2) Overprotective (Submissive), (3) Acceptance, (4) Rejection, (5) Objectivity, while a Strictness Factor was measured by an equal number of scales, (6) Democracy, (7) Autocracy, (8) Infant Training, (9) Habits and Manners, and (10) Sex Training.

The Semantic Differential was compiled by the author. Ten concepts were selected for measurement. Three of these related to the birth process (Childbirth, Doctor, Hospital) and seven related to family life (Mother, Husband, Family, Baby, Son, Daughter, Childcare). For each of these concepts two dimensions of meaning were assessed. These were a Potency Factor and an Evaluative Factor. The Potency Factor was assessed by the continua lenient-severe, light-heavy, soft-hard, weak-strong, while the Evaluative Factor was assessed by the continua bad-good, cruel-kind, unsuccessful-successful, painful-pleasurable, ugly-beautiful, negative-positive. There were 30 dependent variables: 10 on the PAI, 10 for the Potency Factor of the Semantic Differential and 10 for the Evaluative Factor of the Semantic Differential.

The scores of each group were summed for each variable. The statistical analysis consisted of:

1. Comparison of the groups on the 30 dependent variables for the pretests by means of 30 separate analyses of variance.

2. Analysis of covariance for posttest data with both pretest scores and educational level serving as covariates. A separate analysis was performed for each of the 30 dependent variables.

The results of the pretests revealed one significant difference ($p < .05$) on the Parent Attitude Inventory: (strictness concerning) Sex Training. On the Semantic

Differential two significant ($p < .05$) differences were apparent on the Potency Factor: Doctor and Childbirth, while one difference was significant at the .05 level on the Evaluative Factor: Son. The non-Lamaze group was higher on all three of these measures. When the .10 level was considered, the Potency Factor revealed differences on Husband and Daughter while for the Evaluative Factor, differences were apparent on Hospital and Childbirth. The non-Lamaze group was higher on Husband and Hospital while the Lamaze group was higher on Daughter and Childbirth.

Posttest results on the Parent Attitude Inventory revealed only one significant difference ($p < .05$): (strictness concerning) Habits and Manners. On this scale, the Lamaze group was higher, but this group evidenced no change from pretest to posttest while the non-Lamaze group decreased significantly. All differences at the .05 level on the Semantic Differential were restricted to the Potency Factor. These were Doctor, Daughter and Childbirth. On all of these the Lamaze group achieved higher mean scores. At the .10 level, differences were seen on Hospital and Childcare for the Potency Factor with the non-Lamaze group higher and Childcare and Childbirth on the Evaluative Factor. The non-Lamaze group was higher on Childcare, but the Lamaze group evaluated Childbirth higher.

Conclusions

The conclusions of the study consisted of those concerning the pretest data and those concerning the posttest data. That is, conclusions concerning initial differences between the women who choose Lamaze Childbirth training and those who do not choose this type of education and conclusions concerning the differences in those women after exposure to Lamaze training.

In considering initial differences it was concluded that differences in attitude between the two groups were specific to the birth process. Women not choosing childbirth training revealed a more negative attitude toward the birth process and a more strict attitude toward sex training. Further, it was concluded that there were no differences in the attitudes of the two groups toward concepts related to family life and general childrearing.

The hypotheses of the study concerned the change in attitude as related to exposure or non-exposure to Lamaze training. The test of these hypotheses, therefore, were based on an analysis of the posttest data.

The first hypothesis stated in the alternative was:

There will be differences in maternal attitudes as measured by the Parent Attitude Inventory of women trained for childbirth by Lamaze techniques and women not so trained.

On the basis of the evidence it was not possible either to fully accept or fully reject this hypothesis. Of the 10 variables of the Parent Attitude Inventory, nine revealed no significant difference, however, on one variable there was a significant difference. The Parent Attitude Inventory was designed to measure two composite factors: Acceptance-Rejection and Strictness. All five variables subsuming the Acceptance-Rejection Factor indicated no significant differences between the groups. On the basis of this evidence the alternative hypothesis for the Acceptance-Rejection Factor was rejected and the null hypothesis accepted:

There are no differences in attitudes of acceptance or rejection as measured by the Parent Attitude Inventory of women trained for childbirth by Lamaze techniques and women not so trained.

The evidence was inconclusive concerning the maternal attitude of strictness. Of the five variables reflecting this Factor, four revealed no significant differences and only one a significant difference. Several factors were mentioned in Chapter V which may qualify accepting the alternative hypothesis concerning attitudes of strictness.

Hypothesis two stated in the alternative was:

There will be differences in maternal attitudes as measured by ten concepts on a semantic differential of women

trained for childbirth by Lamaze techniques and women not so trained.

The concepts of the Semantic Differential related to the birth process and to family life. The Potency dimension and the Evaluative dimension of each of these concepts was measured. Thus, hypothesis two contains four sub-hypotheses, A, B, C, and D:

A. Potency dimension of concepts related to the birth process

B. Evaluative dimension of concepts related to the birth process

C. Potency dimension of concepts related to family life

D. Evaluative dimension of concepts related to family life

Hypothesis two, A was accepted:

There are differences in maternal attitudes specific to the birth process as measured by the Potency Factor of the semantic differential of women trained for childbirth by Lamaze techniques and women not so trained.

Hypothesis two, B was rejected in the alternative and the null hypothesis accepted:

There are no differences in maternal attitudes specific to the birth process as measured by the Evaluative Factor of the semantic differential of women trained for childbirth by Lamaze techniques and women not so trained.

Hypothesis two, C was rejected in the alternative and the null hypothesis accepted:

There are no differences in maternal attitudes of concepts related to family life as measured by the Potency Factor of the semantic differential of women trained for childbirth by Lamaze techniques and women not so trained.

Hypothesis two, D was rejected in the alternative and the null hypothesis accepted:

There are no differences in maternal attitudes of concepts related to family life as measured by the Evaluative Factor of the semantic differential of women trained for childbirth by Lamaze technique and women not so trained.

Recommendations

This study was limited by the number of subjects. The power of a test to detect differences in groups decreases as the number of subjects decreases. A replication encompassing more subjects could perhaps reveal more differences. In addition, another method of selection of control subjects would improve the validity of the comparison. A true comparison would be of women choosing Lamaze and a similar group who desired the course, but for whom it was not available. The classes are available to all subjects in Greensboro. Further, many doctors in this setting incorporate some aspects of the techniques for all patients and many women are exposed to obstetric nurses versed in the methods at

delivery. Thus the control group may have been contaminated with "spillover" of the technique from enthusiastic physicians, obstetric nurses or mass media material.

It is always questionable whether or not a paper and pencil instrument is a true measurement of attitude. In this study, the semantic differential was the more sensitive instrument. This is true, first because there were seven possible responses as compared to five for the Parent Attitude Inventory. Second, the items of the Parent Attitude Inventory sometimes consisted of dogmatic statements that did not seem designed to measure subtle differences.

The present research has suggested several areas that could possibly be explicated in future studies. Further research into the relationship between strictness and rigidity in sexual attitudes and such variables as childbirth education, behavior at parturition and incidence of complications of pregnancy and delivery could be pursued. Erickson (1965) correlated personality variables with incidence of birth complications but no study has examined the relationship between more specific sexual attitudes and variables such as these. A study assessing more subtle sexual attitudes would be in order.

A second recommendation for future research is in the area of the meaning of "son" and "daughter" to the gravid and recently parturient woman. Specifically, this recommendation should involve an in-depth investigation of the

process of identification at this time and its implication for the well-being of the child and future family life.

A third recommendation for future research is for basic research into the meaning of childbearing itself and its implication for the individual and to society. Futurists such as Toffler (1970) and antifuturists such as Gilder (1973) all agree that the culture is changing rapidly and one of these changes is in the area of sexual mores and behaviors. It is now possible for a woman to choose to have or not to have a child. In the future she may be able to choose to have a child and then to choose to bear it or not to bear it herself. Unless we know the psychological meaning of this biological act, we cannot know whether a choice to avoid pregnancy is a well-deserved relief from travail, or a denial of basic biological being. Gilder (1973) and Mailer (1971) among observers of the contemporary scene caution of the dangers inherent in the technological power we now have to control biological processes without the concommitant understanding of the inherent nature and structure of human psychology and society. It is the role of research to explicate these areas of human understanding.

BIBLIOGRAPHY

BIBLIOGRAPHY

Apger, V. Perinatal problems and the central nervous system. In U. S. Dept. of Health, Education and Welfare, Children's Bureau. The child with central nervous system deficit. Washington: U. S. Government Printing Office, 1965. Pp. 75-76.

Bayley, N. and Schaefer, E. S. Maternal behavior and personality development: Data from the Berkeley Growth Study. In G. R. Medinnus (Ed.), Readings in the psychology of parent-child relations. New York: John Wiley & Sons, 1967. Pp. 157-169.

Becker, W. C. Consequences of different kinds of parental discipline. In M. L. Hoffman and L. W. Hoffman (Eds.), Review of child development research. Vol. I. New York: Russell Sage, 1964. Pp. 169-208.

Becker, W. C., Peterson, D. R., Luria, Z., Shoemaker, D. J., and Hellmer, L. A. Relations of factors derived from parent-interview ratings to behavior problems of five-year olds. Child Development, 1962, 33, 509-535.

Bibring, G. L., Thomas, C. and Dwyer, M. Study of the psychological processes in pregnancy and of the earliest mother child relationship. Psychoanal. Study of the Child, 1961, 16, 9-24.

Bing, E. D., Karmel, M., and Tenz, A. A practical training course for the psychoprophylactic method of childbirth (Lamaze technique). New York: Amer. Soc. for Psychoprophylaxis in Obst., 1961.

Campbell, D. T. and Stanley, J. C. Experimental and quasi-experimental designs for research. Chicago: Rand McNally, 1963.

Chabon, I. Awake and aware. New York: Delcarte Press, 1966.

Cohen, J. Some statistical issues in psychological research. In B. B. Wolman (Ed.), Handbook of clinical psychology. New York: McGraw Hill, 1966. Pp. 95-121.

Cohen, J. Statistical power analysis for the behavioral sciences. New York: Academic Press, Inc., 1969.

Committee on Prenatal and Maternal Care, White House Conference on Child Health and Protection. Obstetric Education. New York: The Century Co., 1932.

Crowther, P. Psychological aspects of motherhood. Child Welfare, 1965, 18, 365-374.

Davids, A. and Holden, R. H. Consistency of maternal attitudes and personality from pregnancy to eight months following childbirth. Developmental Psychology. 1970, 2 (3), 364-366.

Davis, C. D. and Morrone, F. A. An objective evaluation of a prepared childbirth program. Journal of Amer. Obstr. and Gyn., 1962, 84, 1196-1201.

Deutsch, H. The Psychology of women. Vol. II. New York: Grune & Stratton, 1945.

Erickson, M. T. Relationshp between psychological attitudes during pregnancy and complications of pregnancy, labor and delivery. Proc. Amer. Psych. Assn., 1965, 1, 213-214.

Erikson, E. H. Childhood and Society. (2nd ed.) New York: W. W. Norton, 1963.

Ferreira, A. J. The pregnant woman's emotional attitude: Its reflection on the newborn. Amer. J. Orthopsychiat., 1960, 30, 553-561.

Freud, S. Collected papers. Vol. II. New York: Basic Books, 1959.

Gilder, G. F. Sexual suicide. New York: Quandrangle/The N. Y. Times Book Co., 1973.

Gordon, I. J. A parent education approach to provision of early stimulation for the culturally disadvantaged. Final Report, Institute for Development of Human Resources. Univ. of Fla., Gainsville, Fla: Fund for Advancement of Educ., Ford Foundation, 1967.

Guttman, L. A new approach to factor analysis: The radex. In P. F. Lazarsfeld (Ed.), Mathematical thinking in the social sciences. Glencoe, Ill.: Free Press, 1954.

Hawkins, R. P. Universal parenthood training: A laboratory approach to teaching child-rearing skills to every parent. Ed. Tech. 1971, 11, 28-31.

Hurley, J. R. Parental acceptance-rejection and children's intelligence. In G. R. Medinnus (Ed.), Readings in the psychology of parent-child relations. New York: John Wiley & Sons, 1967. Pp. 106-116.

Illsley, R. The sociological study of reproduction and its outcome. In S. A. Richardson and A. R. Guttmacher (Eds.), Childbearing--its social and psychological aspects. New York: Williams and Wilkins, 1967. Pp. 36-48.

Jessner, L., Weigert, E., and Foy, J. L. The development of parental attitudes during pregnancy. In E. J. Anthony and T. Benedek (Eds.), Parenthood: Its psychology and psychopathology. Boston: Little Brown & Co., 1970.

Karmel, M. Thank you, Dr. Lamaze. Philadelphia: Lippencott, 1959.

Kerlinger, F. N. Foundations of behavioral research. New York: Holt, Rinehart and Winston, 1964.

Mailer, N. Prisoner of sex. Boston: Little, Brown & Co., 1971.

Mead, M. and Newton, N. Cultural patterning of prenatal behavior. In S. A. Richardson and A. R. Guttmacher (Eds.), Childbearing: Its social and psychological aspects. New York: Williams and Wilkins, 1967. Pp. 126-143.

Medinnus, G. R. and Curtis, F. L. The relations between maternal self-acceptance and child acceptance. Journal of Consul. Psych., 1963, 27, 542-544.

Miller, H. and Lloyd, M. D. Education for childbirth. Obst. and Gyn., 1961, 17 (1), 120-123.

Osgood, C. E., Suci, G. J., and Tannenbaum, P. H. The measurement of meaning. Urbana, Ill.: Univ. of Ill. Press, 1957.

Pittfield, M. and Oppenheim, A. N. Child rearing attitudes of mothers of psychotic children. J. of Child Psych. & Psychtry., 1964, 5, 51-57.

Read, G. D. Childbirth without fear, (Rev. ed.) New York: Harper, 1953.

Resnick, M. B., Weld, G. L. and Lally, J. R. Verbalizations of environmentally deprived two-year olds as a function of the presence of a tester in a standardized test situation. Paper presented at meeting of Amer. Ed. Research Assoc., 1969. (ED-057-880).

Rosenberg, B. D. Special Delivery. New York: Ziff-Davis Pub., 1944.

Rubin, R. Attainment of the maternal role: II models and referrants. Nursing Research, 1967, 16 (4), 342-346. (a)

Rubin, R. Attainment of the maternal role: I processes. Nursing Research. 1967, 16 (3), 237-246. (b)

Schaefer, E. S. A circumplex model for maternal behavior. J. Abnormal & Soc. Psych., 1959, 59, 226-235.

Schaefer, E. S. and Manheimer, H. Dimensions of perinatal adjustment. Paper presented at the meeting of the Eastern Psychological Assoc., New York, April, 1960.

Sears, R. R., Maccoby, E. E., and Levin, H. Patterns of child-rearing. Evanston, Ill.: Row Peterson, 1957.

Shainess, N. The structure of the mothering encounter. J. Nervous Men. Dis., 1963, 136 (2), 146-161.

Tanzer, D. R. W. The psychology of pregnancy and childbirth: An investigation of natural childbirth. (Doctoral dissertation, Brandeis University) Ann Arbor, Mich.: University Microfilms, 1967. No. 67-16,580.

Tanzer, D. Natural childbirth: Pain or peak experience? Psychology Today, 1968, 1, Oct., 17-21.

Thoms, H., Karlovsky, E. D., 200 deliveries under a training for childbirth program. Amer. J. of Obst. & Gyn., 1954, 88, 279-284.

Toffler, A. Future shock. New York: Random House, 1970.

Vellay, P. Childbirth without pain. New York: Dutton & Co., 1960.

Van Auken, W. B. D. Psychological preparation of 1000 underpriviliged primigravid patients for labor. Ob. & Gyn., 1971, 38 (3), 461-462.

Womble, D. L. Foundations for marriage and family relations, New York: Macmillan Co., 1966.

Zemlick, M. and Watson, R. Maternal attitudes of acceptance and rejection during and after pregnancy. Amer. J. Orthopsychiat., 1953, 23, 570-584.

APPENDIX A

LAMAZE TECHNIQUES

LAMAZE TECHNIQUES

Through the certification of teachers and material disseminated by the American Society for Psychoprophylaxis in Obstetrics (ASPO) the content of Lamaze classes is standardized. The following material is condensed from A Practical Training Course for the Psychoprophylactic Method of Childbirth (Lamaze Technique) (Bing, Karmel and Tanz, 1961). This manual was designed for the use of doctors, nurses and physiotherapists as a guide for teaching these methods.

The stated rationale for the Method is:

> 1. Women have already been conditioned to associate the uterine contractions of labor with considerable pain! This harmful "conditioned reflex" must be abolished by "deconditioning" e.g. education.
> 2. Any residual discomfort which may be present in adequately deconditioned patients can be markedly decreased or nullified by substituting a new, beneficial "conditioned reflex" e.g. instituting as a response to the perception of the uterine contraction--not pain--but a precise respiratory exercise, requiring considerable subjective concentration on its performance and thereby exerting a reciprocal dampening effect on the ability of the brain to perceive other undesirable stimuli (such as pain). Thus, the uterine contraction should not trigger "PAIN" in the patient's mind but rather "BREATHE," --rhythmically, precisely, just as you have been taught. (Bing, Karmel, and Tanz, 1961, p. 2)

The methods are essentially educational and the goals are restricted to understanding the physiological and psychological processes involved in pregnancy, labor and deliver. The classes are usually open to both husband and

wife. The Method encourages the active participation of the husband. His role is to be present in labor and delivery for the trained husband has many functions. These are:

1. He assists the woman in timing contractions and signals the beginning and termination of a contraction.

2. He checks for relaxation and muscular coordination.

3. He checks for precision of respiratory exercise.

4. He performs minor functions the nursing staff is usually too busy to do such as massaging the woman's back, etc.

The Training Manual consists of lectures designed for each class and stresses the following concepts:

1. Primary purpose is to condition expectant mothers to give birth.

2. Training for childbirth should begin when motivation is strongest and end when conditioning is most effective.

3. The Method is not a therapy, and makes no claim to deal with anything other than labor and delivery.

Content of Classes

Class I

1. Lecture outlining method, giving rationale of the method

2. Use of the Birth Atlas to explain process of conception, development of fetus and what happens in labor and delivery

3. Discussion of the reasons for certain discomforts in pregnancy and how to correct them with exercise and correct posture

Class II

1. Concentration-relaxation exercises. These are designed to develop muscular control and an awareness of muscle tension and relaxation

2. Body-building exercises. These exercises are designed for a general toning of muscles especially those of legs, abdomen, and perineum

3. Respiration exercises. This section covers and reviews the three stages of labor and a description of the types of contractions accompanying each stage. Shallow breathing exercises are taught to maintain control for the first phase of the first stage of labor.

Class III

1. Review of concentration and body building exercises (with practice)

2. Review of three stages of labor

3. Review of character of contractions with each stage

4. Review of slow chest breathing

5. Teaching of shallow panting breathing for second phase of the first stage of labor

6. Teaching with demonstration and practice of accelerated and decelerated breathing. This technique to follow the rhythm of contraction

Class IV

1. Review of first stage of labor, its subdivisions and breathing techniques

2. Teaching of preliminary expulsion exercises:

A. Control of perineal muscles

B. Exhalation to control pushing reflex

3. Teaching of technique for pushing during second stage of labor

Class V

1. Discussion of when to apply techniques learned in previous lessons: recognition of labor, what to do when labor begins, when to call doctor, when to use breathing techniques

2. Review of stages of labor and breathing to use at each stage

3. Explanation of what will happen in hospital

4. Review of entire process

Class VI

1. Questions

2. Recording of woman in labor (in many classes this is substituted by a woman or couple who has recently delivered discussing their experience)

3. Complete review of stages of labor and breathing exercises

APPENDIX B

PARENT ATTITUDE INVENTORY

PARENT ATTITUDE INVENTORY

Below you will find a number of statements which deal with people's beliefs, attitudes, opinions or feelings about the raising of children. You will agree with some of them, and disagree with others; from time to time you may feel uncertain whether you agree or not; then again, you may agree or disagree strongly.

Read each item carefully, then put a check in the column which best expresses your own view. Work as quickly as you can, without spending too much time on any one statement.

All the statements refer to girls as well as to boys. Unless the statement clearly refers to a baby, you should have in mind children of primary school age, boys or girls, and not necessarily only your own children.

Your answers will, of course, be treated in the strictest confidence, and will only be analysed statistically as part of a much larger number. No attention will be paid to any individual responses.

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1. A mother takes great joy in watching each new development in her children.					
2. Children should feel free to confide in their parents.					
3. Parents should explain to their children why certain things are necessary.					
4. Babies should be fed strictly by the clock.					

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
5. The worst thing about having children is that you can never keep the house clean and tidy.					
6. It is all right to give babies a milk feeding when they cry in the middle of the night.					
7. You cannot expect obedience from your child without giving him an explanation.					
8. Parents should agree with one another about the best way to bring up the children, and then stick to it.					
9. If you're not firm, children will try to get away with anything.					
10. Children who indulge in sex play become adult sex criminals.					
11. Sometimes children are more of a burden than a blessing.					
12. If we could afford to do so, we would prefer to send our children to a private school.					
13. Looking after the children really demands too much of a mother.					
14. Children should give their parents unquestioning obedience.					
15. No child should be allowed to be rude and ill mannered.					

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
16. It is difficult to deny children things if they ask for them.					
17. Parents should be ready to sacrifice almost everything for their children.					
18. I want my child to be neat and clean at all times.					
19. Children should have a say in the making of family plans.					
20. As a parent I enjoy taking part in the children's hobbies and activities.					
21. A child can never do anything really wrong.					
22. It is very wrong for children to play with their sexual organs.					
23. The earlier you wean a baby, the better.					
24. Children should be able to tell ahead of time what will bring punishment from their mother.					
25. A child's best companion is his mother.					
26. A wife who goes out to work has a better life than one who stays at home and has children.					
27. My child's happiness is bound up with mine.					

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
28. A child should never be punished out of sheer irritation, but only for his own good.					
29. It is all right for a mother to dress her child regularly, even though he can do it himself.					
30. Punishment should be carefully thought out to fit the offense.					
31. No matter what age he is, a child needs to be hugged, kissed and fondled.					
32. A mother should try to get her baby to use the potty chair from birth.					
33. Young children should never be allowed to play together in the nude.					
34. Children who tell dirty stories should be severely punished.					
35. It is all right for a mother to bathe her child regularly, even though he can do it himself.					
36. There is not enough discipline in the home nowadays.					
37. A child should do what he is told to do, without stopping to argue about it.					
38. Children should not be permitted to learn about sex until they are old enough to understand all about it.					

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
39. Children should be seen and not heard.					
40. A mother should make every effort to stop her child from sucking his fingers.					
41. Children should never be told lies for the sake of convenience.					
42. Children bring husband and wife closer to each other.					
43. Children should fear their parents to some degree.					
44. A child should never be allowed to take the slightest risk.					
45. It is difficult for a mother to feel at ease when she does not know exactly what her child is doing.					
46. Children should always be made to tidy their own things.					
47. A mother must never vent her own anger at the child when punishing him.					
48. A child's happiness is more important than that of any adult.					
49. A child should never be permitted to talk back.					

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
50. By the time a child is four years old, the mother should refuse to give him anything unless he first says "please."					
51. A child who gets his clothes dirty should be made to feel that he has done something seriously wrong.					
52. Parents should always take their children with them on holiday trips.					

APPENDIX C

PARENT ATTITUDE INVENTORY SCALES

PARENT ATTITUDE INVENTORY SCALES

Acceptance-Rejection Factor

Scale 1: Overprotective (Dominant)

25. A child's best companion is his mother.

29. It is all right for a mother to dress her child regularly, even though he can do it himself.

35. It is all right for a mother to bathe her child regularly, even though he can do it himself.

44. A child should never be allowed to take the slightest risk.

45. It is difficult for a mother to feel at ease when she does not know exactly what her child is doing.

Scale 2: Overprotective

16. It is difficult to deny children things if they ask for them.

17. Parents should be ready to sacrifice almost everything for their children.

21. A child can never do anything really wrong.

31. No matter what age he is, a child needs to be hugged, kissed and fondled.

48. A child's happiness is more important than that of any adult.

Scale 3: Acceptance

20. As a parent I enjoy taking part in the children's hobbies and activities.

27. My child's happiness is bound up with mine.

41. Children should never be told lies for the sake of convenience.

42. Children bring husband and wife closer to each other.

Scale 3: Acceptance (continued)

52. Parents should always take their children with them on holiday trips.

Scale 4: Rejection

5. The worst thing about having children is that you can never keep the house clean and tidy.

11. Sometimes children are more of a burden than a blessing.

12. If we could afford to do so, we would perfer to send our children to a private school.

13. Looking after the children really demands too much of the mother.

14. A wife who goes out to work has a better life than one who stays at home and has children.

Scale 5: Objectivity

8. Parents should agree with one another about the best way to bring up the children and then stick to it.

24. Children should be able to tell ahead of time what will bring punishment from their mother.

28. A child should never be punished out of sheer irritation, but only for his own good.

30. Punishment should be carefully thought out to fit the offense.

47. A mother must never vent her own anger at the child when punishing him.

Strictness Factor

Scale 6: Democarcy

3. Parents should explain to their children why certain things are necessary.

7. You cannot expect obedience from your child without giving him an explanation.

Scale 6: Democracy (continued)

14. Children should give their parents unquestioning obedience.

19. Children should have a say in the making of family plans.

49. A child should never be permitted to talk back.

Scale 7: Autocracy

9. If you're not firm, children will try to get away with anything.

36. There is not enough discipline in the home nowadays.

37. A child should do what he is told to do, without stopping to argue about it.

39. Children should be seen and not heard.

43. Children should fear their parents to some degree.

Scale 8: Infant Training, Strictness

4. Babies should be fed strictly by the clock.

6. It is all right to give babies a milk feeding when they cry in the middle of the night.

23. The earlier you wean a baby, the better.

32. A mother should try to get her baby to use the pot from birth.

40. A mother should make every effort to stop her child from sucking his fingers.

Scale 9: Habits and Manners, Strictness

15. No child should be allowed to be rude and ill mannered.

18. I want my child to be neat and clean at all times.

46. Children should always be made to tidy their own things.

Scale 9: Habits and Manners, Strictness (continued)

50. By the time a child is four years old, the mother should refuse to give him anything unless he first says "please."

51. A child who gets his clothes dirty should be made to feel that he has done something seriously wrong.

Scale 10: Sex, Strictness

10. Children who indulge in sex play become adult sex criminals.

22. It is very wrong for children to play with their sexual organs.

33. Young children should never be allowed to play together in the nude.

34. Children who tell dirty stories should be severely punished.

38. Children should not be permitted to learn about sex until they are old enough to understand all about it.

APPENDIX D

PARENT ATTITUDE INVENTORY SCORING KEY

PARENT ATTITUDE INVENTORY SCORING KEY

Strongly disagree = 1

Disagree = 2

Uncertain = 3

Agree = 4

Strongly agree = 5

Scale	Items
1	25, 29, 35, 44, 45
2	16, 17, 21, 31, 48
3	20, 27, 41, 42, 52
4	5, 11, 12, 13, 26
5	8, 24, 28, 30, 47
6	3, 7, 14*, 19, 49*
7	9, 36, 37, 39, 43
8	4, 6*, 23, 32, 40
9	15, 18, 46, 50, 51
10	10, 22, 33, 34, 38

* items scored in reverse

APPENDIX E

SEMANTIC DIFFERENTIAL

SEMANTIC DIFFERENTIAL

The purpose of this study is to measure the meanings of certain things to various people by having them judge them against a series of descriptive scales. In taking this test, please make your judgments on the basis of what these things mean to you. On each page of this booklet you will find a different concept to be judged and beneath it a set of scales. You are to rate the concept on each of these scales in order.

Here is how you are to use these scales:

If you feel that the concept at the top of the page is very closely related to one end of the scale, you should place your check-mark as follows:

fair: x :___:___:___:___:___:___:unfair

or

fair:___:___:___:___:___:___: x :unfair

If you feel that the concept is quite closely related to one or the other end of the scale (but not extremely) you should place your check-mark as follows:

strong:___: x :___:___:___:___:___:weak

or

strong:___:___:___:___:___: x :___:weak

If the concept seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check as follows:

active:___:___: x :___:___:___:___:passive

or

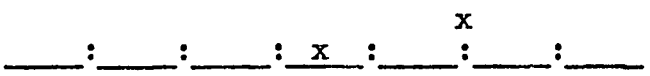
active:___:___:___:___: x :___:___:passive

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you're judging. If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space:

safe:___:___:___: x :___:___:___:dangerous

IMPORTANT: (1) Place your check-marks in the middle of spaces, not on the boundaries:

THIS NOT THIS



(2) Be sure you check every scale for every concept--do not omit any.

(3) Never put more than one check-mark on a single scale.

Sometimes you may feel as though you've had the same item before on the test. This will not be the case, so do not look back and forth through the items. Do not try to remember how you checked similar items earlier in the test. Make each item a separate and independent judgment. Work at a fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items that we want. On the other hand, please do not be careless because we want your true impressions.

BABY

good:____:____:____:____:____:____:____:bad

severe:____:____:____:____:____:____:____:lenient

cruel:____:____:____:____:____:____:____:kind

light:____:____:____:____:____:____:____:heavy

unsuccessful:____:____:____:____:____:____:____:successful

soft:____:____:____:____:____:____:____:hard

pleasurable:____:____:____:____:____:____:____:painful

weak:____:____:____:____:____:____:____:strong

ugly:____:____:____:____:____:____:____:beautiful

negative:____:____:____:____:____:____:____:positive

CHILDBIRTH

good:____:____:____:____:____:____:____:bad

severe:____:____:____:____:____:____:____:lenient

cruel:____:____:____:____:____:____:____:kind

light:____:____:____:____:____:____:____:heavy

unsuccessful:____:____:____:____:____:____:____:successful

soft:____:____:____:____:____:____:____:hard

pleasurable:____:____:____:____:____:____:____:painful

weak:____:____:____:____:____:____:____:strong

ugly:____:____:____:____:____:____:____:beautiful

negative:____:____:____:____:____:____:____:positive

CHILDCARE

good:____:____:____:____:____:____:____:bad

severe:____:____:____:____:____:____:____:lenient

cruel:____:____:____:____:____:____:____:kind

light:____:____:____:____:____:____:____:heavy

unsuccessful:____:____:____:____:____:____:____:successful

soft:____:____:____:____:____:____:____:hard

pleasurable:____:____:____:____:____:____:____:painful

weak:____:____:____:____:____:____:____:strong

ugly:____:____:____:____:____:____:____:beautiful

negative:____:____:____:____:____:____:____:positive

DAUGHTER

good:____:____:____:____:____:____:____:bad

severe:____:____:____:____:____:____:____:lenient

cruel:____:____:____:____:____:____:____:kind

light:____:____:____:____:____:____:____:heavy

unsuccessful:____:____:____:____:____:____:____:successful

soft:____:____:____:____:____:____:____:hard

pleasurable:____:____:____:____:____:____:____:painful

weak:____:____:____:____:____:____:____:strong

ugly:____:____:____:____:____:____:____:beautiful

negative:____:____:____:____:____:____:____:positive

DOCTOR

good:____:____:____:____:____:____:____:bad

severe:____:____:____:____:____:____:____:lenient

cruel:____:____:____:____:____:____:____:kind

light:____:____:____:____:____:____:____:heavy

unsuccessful:____:____:____:____:____:____:____:successful

soft:____:____:____:____:____:____:____:hard

pleasurable:____:____:____:____:____:____:____:painful

weak:____:____:____:____:____:____:____:strong

ugly:____:____:____:____:____:____:____:beautiful

negative:____:____:____:____:____:____:____:positive

FAMILY

good:____:____:____:____:____:____:____:bad

severe:____:____:____:____:____:____:____:lenient

cruel:____:____:____:____:____:____:____:kind

light:____:____:____:____:____:____:____:heavy

unsuccessful:____:____:____:____:____:____:____:successful

soft:____:____:____:____:____:____:____:hard

pleasurable:____:____:____:____:____:____:____:painful

weak:____:____:____:____:____:____:____:strong

ugly:____:____:____:____:____:____:____:beautiful

negative:____:____:____:____:____:____:____:positive

HOSPITAL

good:____:____:____:____:____:____:____:bad

severe:____:____:____:____:____:____:____:lenient

cruel:____:____:____:____:____:____:____:kind

light:____:____:____:____:____:____:____:heavy

unsuccessful:____:____:____:____:____:____:____:successful

soft:____:____:____:____:____:____:____:hard

pleasurable:____:____:____:____:____:____:____:painful

weak:____:____:____:____:____:____:____:strong

ugly:____:____:____:____:____:____:____:beautiful

negative:____:____:____:____:____:____:____:positive

HUSBAND

good:____:____:____:____:____:____:____:bad

severe:____:____:____:____:____:____:____:lenient

cruel:____:____:____:____:____:____:____:kind

light:____:____:____:____:____:____:____:heavy

unsuccessful:____:____:____:____:____:____:____:successful

soft:____:____:____:____:____:____:____:hard

pleasurable:____:____:____:____:____:____:____:painful

weak:____:____:____:____:____:____:____:strong

ugly:____:____:____:____:____:____:____:beautiful

negative:____:____:____:____:____:____:____:positive

MOTHER

good:____:____:____:____:____:____:____:bad

severe:____:____:____:____:____:____:____:lenient

cruel:____:____:____:____:____:____:____:kind

light:____:____:____:____:____:____:____:heavy

unsuccessful:____:____:____:____:____:____:____:successful

soft:____:____:____:____:____:____:____:hard

pleasurable:____:____:____:____:____:____:____:painful

weak:____:____:____:____:____:____:____:strong

ugly:____:____:____:____:____:____:____:beautiful

negative:____:____:____:____:____:____:____:positive

SON

good:____:____:____:____:____:____:____:bad

severe:____:____:____:____:____:____:____:lenient

cruel:____:____:____:____:____:____:____:kind

light:____:____:____:____:____:____:____:heavy

unsuccessful:____:____:____:____:____:____:____:successful

soft:____:____:____:____:____:____:____:hard

pleasurable:____:____:____:____:____:____:____:painful

weak:____:____:____:____:____:____:____:strong

ugly:____:____:____:____:____:____:____:beautiful

negative:____:____:____:____:____:____:____:positive

APPENDIX F

SEMANTIC DIFFERENTIAL SCORING KEY

SEMANTIC DIFFERENTIAL SCORING KEY

Scoring Key: Evaluative Factor, Semantic Differential

good: 7 : 6 : 5 : 4 : 3 : 2 : 1 :bad

cruel: 1 : 2 : 3 : 4 : 5 : 6 : 7 :kind

unsuccessful: 1 : 2 : 3 : 4 : 5 : 6 : 7 :successful

pleasurable: 7 : 6 : 5 : 4 : 3 : 2 : 1 :painful

ugle: 1 : 2 : 3 : 4 : 5 : 6 : 7 :beautiful

negative: 1 : 2 : 3 : 4 : 5 : 6 : 7 :positive

Scoring Key: Potency Factor, Semantic Differential

severe: 7 : 6 : 5 : 4 : 3 : 2 : 1 :lenient

light: 1 : 2 : 3 : 4 : 5 : 6 : 7 :heavy

soft: 1 : 2 : 3 : 4 : 5 : 6 : 7 :hard

weak: 1 : 2 : 3 : 4 : 5 : 6 : 7 :strong

APPENDIX G

COVER LETTER TO SUBJECTS

Dear Parents,

The Department of Child Development and Family Relations of the University of North Carolina at Greensboro in cooperation with Greensboro obstetricians and childbirth educators is conducting research in preparation for parenthood.

The present study is designed to help us learn how mothers and fathers feel about children both before the birth of their child and afterwards. Bringing up children is never an easy task and we feel that parents and research workers have much to learn from each other. Your expressed views should make it possible to give the best advice available to young mothers. It is for this reason that we invite your frank and candid cooperation. Your answers will be kept in strictest confidence and used only for research purposes.

Attached you will find two questionnaires to be completed. Please work quickly and do not refer to previous answers. We want your first impressions. Approximately six weeks after the birth of your child, we will contact you again for a second interview.

To complete the questionnaires:

1. Mothers: The researcher will wait while you complete the forms. Return them to the researcher. You will be given forms for your husband. Please give these to him as soon as possible. Please do not discuss your answers with him until he has completed his.

2. Fathers: Please complete the two questionnaires and place them in the stamped, addressed envlope and mail.

Thank you for your time and effort in this study. If you are interested in being informed of the results of this study, you will be given the opportunity to receive these after the second interview.

Sincerely,

Marylin O. Karmel, doctoral candidate
Helen Canaday, Ed.D
Professor, Home Economics
Dep't. of Child Development/
Family Relations

APPENDIX H

PERSONAL DATA

PERSONAL DATA

To help in the statistical analysis, please fill in the following items:

1. Age _____

2. Education: Check the highest amount of education completed.

   Grade school____

   High School: 1 yr.___ 2 yrs.___ 3 yrs.___ 4 yrs.___

   College: 1 yr.___ 2 yrs.___ 3 yrs.___ 4 yrs.___

   Graduate School:____ Master's____ Doctorate____

3. Number of children_____

   Boys_____ Age(s)____

   Girls____ Age(s)____

   Date this child is due to be born_____

4. Family Occupation:

   Husband _____

   Wife _____

5. Parent's Occupation:

   Father _____

   Mother _____

APPENDIX I

SAMPLE LETTER TO DOCTOR

October 4, 1973

Dear Dr. _____:

Thank you for your time concerning my research. Let me briefly explain the study. It is a Ph.D. dissertation and is a comparison of maternal attitudes in Lamaze trained women and women receiving no formal prenatal education. The procedure will be to assess the attitudes of 40 women taking Lamaze training and match them with a similar group selected from the private practice of various Greensboro obstetricians, until 40 women are obtained. The groups are to be matched on the factors of race, age, education and parity. Both groups will be interviewed before and after the birth of their child. The data is gathered by means of two questionnaires and take approximately one-half an hour.

In the event that you could help me with subjects, no interviewing would be done in your office. All interviewing will be done at the homes of the women and at their convenience. Of course, the women will be asked if they wish to participate and the purposes and uses of the research explained insofar as possible.

From your office I would need the names, addresses and phone numbers of white, married women expecting a child in late November, December and January. It would be helpful to have their age and parity. I enclose a copy of the instruments I am using as well as the letter of introduction for your information.

Thank you for your consideration in this matter.

Sincerely,

Marylin O. Karmel
doctoral student

APPENDIX J

ANALYSIS OF VARIANCE SUMMARY TABLES

ANALYSIS OF VARIANCE SUMMARY TABLES

Degrees of Freedom for all analyses were 1, 54. An analysis was performed for each of 30 variables. The probability of F at .01 = 7.12, .05 = 4.02 and .10 = 2.80.

Hospital, Potency

Source	SS	MS	F
Between	4.57	4.57	0.66
Within	371.64	6.88	

Hospital, Evaluative

Source	SS	MS	F
Between	73.14	73.14	3.36
Within	1175.96	21.76	

Son, Potency

Source	SS	MS	F
Between	3.50	3.50	0.53
Within	354.42	6.56	

Son, Evaluative

Source	SS	MS	F
Between	126.00	126.00	4.79
Within	1421.92	26.33	

Mother, Potency

Source	SS	MS	F
Between	19.45	19.45	1.43
Within	734.39	13.60	

Mother, Evaluative

Source	SS	MS	F
Between	14.00	14.00	0.48
Within	1561.42	28.92	

Husband, Potency

Source	SS	MS	F
Between	48.29	48.29	3.61
Within	721.42	13.36	

Husband, Evaluative

Source	SS	MS	F
Between	3.02	3.02	0.10
Within	1630.95	30.20	

Family Potency

Source	SS	MS	F
Between	7.88	7.88	1.00
Within	424.67	7.86	

Family, Evaluative

Source	SS	MS	F
Between	27.16	27.16	1.42
Within	1033.38	19.14	

Doctor, Potency

Source	SS	MS	F
Between	48.29	48.29	5.20
Within	501.06	9.28	

Doctor, Evaluative

Source	SS	MS	F
Between	41.14	41.14	2.41
Within	922.85	17.09	

Daughter, Potency

Source	SS	MS	F
Between	33.08	33.08	3.19
Within	558.96	10.35	

Daughter, Evaluative

Source	SS	MS	F
Between	13.02	13.02	0.49
Within	1427.81	26.44	

Childcare, Potency

Source	SS	MS	F
Between	9.45	9.45	1.00
Within	509.11	9.42	

Childcare, Evaluative

Source	SS	MS	F
Between	36.16	36.16	1.14
Within	1714.81	31.76	

Childbirth, Potency

Source	SS	MS	F
Between	41.14	41.14	4.58
Within	485.35	8.99	

Childbirth, Evaluative

Source	SS	MS	F
Between	111.45	111.45	3.33
Within	1808.67	33.49	

Baby, Potency

Source	SS	MS	F
Between	15.02	15.02	0.92
Within	881.52	16.32	

Baby, Evaluative

Source	SS	MS	F
Between	20.64	20.64	0.91
Within	1226.78	22.72	

Overprotective (Dominant)

Source	SS	MS	F
Between	6.45	6.45	1.05
Within	330.01	6.11	

Overprotective (Submissive)

Source	SS	MS	F
Between	7.14	7.14	2.52
Within	152.79	2.83	

Acceptance

Source	SS	MS	F
Between	5.16	5.16	1.16
Within	241.39	4.47	

Rejection

Source	SS	MS	F
Between	7.14	7.14	2.53
Within	152.79	2.83	

Objectivity

Source	SS	MS	F
Between	.88	.88	0.19
Within	252.11	4.67	

Democracy

Source	SS	MS	F
Between	1.79	1.79	0.35
Within	273.07	5.06	

Autocracy

Source	SS	MS	F
Between	.29	.29	0.04
Within	389.64	7.22	

Infant Training

Source	SS	MS	F
Between	1.45	1.45	0.29
Within	268.68	4.98	

Habits and Manners

Source	SS	MS	F
Between	1.14	1.14	0.16
Within	383.07	7.09	

Sex Training

Source	SS	MS	F
Between	123.02	123.02	20.19
Within	328.96	6.09	

APPENDIX K

ANALYSIS OF COVARIANCE SUMMARY TABLES

ANALYSIS OF COVARIANCE SUMMARY TABLES

Degrees of freedom for all analyses were 1, 52. An analysis was performed for each of 30 variables. Education and Pretest F is a test of the significance of regression of dependent variable on these variables. The Between F is a test of the significance of the difference of adjusted means of the dependent variable. The probability of F at .01 = 7.17, .05 = 4.03 and .10 = 2.81.

Hospital, Potency

Source	SS	MS	F
Education	11.09	11.09	1.61
Pretest	37.42	37.42	5.43
Between	19.38	19.38	2.81
Within	358.13	6.89	

Hospital Evaluative

Source	SS	MS	F
Education	111.92	111.92	1.61
Pretest	148.93	148.93	7.08
Between	4.48	4.48	0.21
Within	1093.13	21.02	

Son, Potency

Source	SS	MS	F
Education	5.61	5.61	0.72
Pretest	97.75	97.75	12.47
Between	1.92	1.92	0.25
Within	407.72	7.84	

Son, Evaluative

Source	SS	MS	F
Education	0.34	0.34	0.01
Pretest	233.51	233.51	7.71
Between	1.55	1.55	0.05
Within	1574.75	30.28	

Mother, Potency

Source	SS	MS	F
Education	15.21	15.21	2.00
Pretest	152.52	152.52	20.03
Between	0.26	0.26	0.03
Within	396.00	7.62	

Mother, Evaluative

Source	SS	MS	F
Education	14.59	14.59	0.69
Pretest	292.32	292.32	13.84
Between	4.40	4.40	0.21
Within	1098.52	21.13	

Husband, Potency

Source	SS	MS	F
Education	18.97	18.97	2.94
Pretest	211.08	211.08	32.67
Between	11.13	11.13	1.72
Within	336.00	6.46	

Husband, Evaluative

Source	SS	MS	F
Education	0.28	0.28	0.02
Pretest	844.65	844.65	55.26
Between	11.66	11.66	0.76
Within	794.84	14.29	

Family, Potency

Source	SS	MS	F
Education	7.52	7.52	1.53
Pretest	92.99	92.99	18.88
Between	1.18	1.18	0.24
Within	256.09	4.93	

Family, Evaluative

Source	SS	MS	F
Education	1.00	1.00	0.08
Pretest	129.32	129.32	9.94
Between	20.57	20.57	1.58
Within	676.85	13.01	

Doctor, Potency

Source	SS	MS	F
Education	0.01	0.01	0.00
Pretest	81.13	81.13	11.27
Beteen	31.82	31.82	4.42
Within	374.25	7.20	

Doctor, Evaluative

Source	SS	MS	F
Education	70.52	70.52	5.61
Pretest	103.53	203.53	8.24
Between	4.33	4.33	0.35
Within	653.16	12.56	

Daughter, Potency

Source	SS	MS	F
Education	5.93	5.93	0.69
Pretest	152.59	152.59	17.65
Between	40.37	40.37	4.67
Within	449.44	8.64	

Daughter, Evaluative

Source	SS	MS	F
Education	4.49	4.49	0.36
Pretest	275.19	275.19	21.95
Between	10.71	10.71	0.85
Within	651.91	12.54	

Childcare, Potency

Source	SS	MS	F
Education	1.59	1.59	0.36
Pretest	122.27	122.27	27.22
Between	10.68	10.68	2.38
Within	233.56	4.49	

Childcare, Evaluative

Source	SS	MS	F
Education	0.03	0.03	0.00
Pretest	513.86	513.86	34.89
Between	44.63	44.63	3.03
Within	765.91	14.73	

Childbirth, Potency

Source	SS	MS	F
Education	20.18	20.18	1.19
Pretest	99.93	99.93	5.89
Between	123.83	123.83	7.30
Within	881.70	16.96	

Childbirth, Evaluative

Source	SS	MS	F
Education	7.13	7.13	0.36
Pretest	425.03	425.03	21.71
Between	53.48	53.48	2.73
Within	1018.27	19.58	

Baby, Potency

Source	SS	MS	F
Education	4.83	4.83	0.59
Pretest	173.10	173.10	21.05
Between	7.56	7.56	0.92
Within	427.58	8.22	

Baby, Evaluative

Source	SS	MS	F
Education	7.31	7.31	0.51
Pretest	80.42	80.42	5.56
Between	26.30	26.30	1.82
Within	752.09	14.46	

Overprotective (Dominant)

Source	SS	MS	F
Education	0.89	0.89	0.19
Pretest	57.40	57.40	12.09
Between	2.78	2.78	0.59
Within	246.83	4.75	

Overprotective (Submissive)

Source	SS	MS	F
Education	5.27	5.27	0.69
Pretest	64.43	64.43	8.37
Between	7.72	7.72	1.00
Within	400.19	7.70	

Acceptance

Source	SS	MS	F
Education	2.12	2.12	0.69
Pretest	116.39	116.39	37.75
Between	0.14	0.14	0.05
Within	160.33	3.08	

Rejection

Source	SS	MS	F
Education	0.07	0.07	0.02
Pretest	42.19	42.19	11.33
Between	0.14	0.14	0.04
Within	193.62	3.72	

Objectivity

Source	SS	MS	F
Education	0.40	0.40	0.09
Pretest	49.80	49.80	11.46
Between	1.88	1.88	0.43
Within	226.01	4.35	

Democracy

Source	SS	MS	F
Education	1.31	1.31	0.52
Pretest	79.16	79.16	31.52
Between	0.58	0.58	0.23
Within	130.59	2.51	

Autocracy

Source	SS	MS	F
Education	7.08	7.08	1.89
Pretest	230.35	230.35	61.52
Between	0.60	0.60	0.16
Within	194.71	3.75	

Infant Training

Source	SS	MS	F
Education	8.92	8.92	1.73
Pretest	51.23	51.23	9.96
Between	1.62	1.62	0.32
Within	267.54	5.15	

Habits and Manners

Source	SS	MS	F
Education	8.78	8.78	2.91
Pretest	29.51	29.51	9.76
Between	15.99	15.99	5.29
Within	157.17	3.02	

Sex Training

Source	SS	MS	F
Education	20.79	20.79	2.99
Pretest	101.08	101.08	14.53
Between	0.73	0.73	0.11
Within	361.74	6.96	